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ENTOMOLOGICAL NEWS

Vol. XLII No. 10

HENRY SKINNER
1861-1926

CONTENTS

Cartwright—Digger Wasps and Buprestidae (Hym.: Cerceridae, Coleop.: Buprestidae) 269
Vansell—Flight of Corixids (Hemip.; Corixidae) 270
Richards—Noctuidae of Northern Georgia and Tennessee (Lepid.) . . . 271
Bird—The Nymph of Enallagma basidens Calvert (Odonata: Agrionidae) 276
Bequaert—Note on Odynerus bermudensis, with a Description of the Male (Hymenoptera: Vespidae) 277
Tietz—Catopsilia philea in Pennsylvania (Lepid.: Pieridae) 279
Hall—New Texas Sarcophaginae (Diptera: Calliphoridae) 280
Horst—Rex Research Foundation 286
Dornfeld—A Night-Flying Butterfly and Some Unusual Locality Records (Lepidoptera) 287
Entomological Literature 288
Review—Dr. Holland's New Butterfly Book 291
Review—Imm's Social Behavior in Insects. 292
Obituary and Published Writings on Insects—Charles Dury 293

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ENTOMOLOGICAL NEWS

VOL. XLII. DECEMBER, 1931 No. 10

Digger Wasps and Buprestidae (Hym.: Cerceridae, Coleop.: Buprestidae).

By O. L. CARTWRIGHT, South Carolina Experiment Station, Clemson College, S. C.

On July 4, 1931, several members of the Entomology Division of the South Carolina Experiment Station, enjoyed a holiday collecting trip to Jocassee, South Carolina. Near this delightful little mountain community they were attracted to a sandy knoll-like elevation in the narrow road by many wasps flying a few inches above the ground. The particular area apparently most attractive to the wasps was somewhat wider than most of the road and used by motorists in turning their cars, in all a space covering not more than one hundred square yards. A number of the wasps were caught and found to be of several species, *Stictia carolina* (Fab.) being most numerous, followed in order by *Bicyrtes quadrifasciata* (Say), *Cerceris fumipennis* Say, *Elis carolina* (Panz.) and *Cerceris mandibularis* Patton. *C. fumipennis* were observed bringing Buprestidae to their numerous burrows in the roadway. *C. mandibularis* brought in a grasshopper nymph. The other species seemed to be flying about rather aimlessly over the area.

The most interesting and perhaps unusual find, however, was the discovery of a surprising number of Buprestidae scattered about on the ground. The infrequent cars passing, backing and turning at the point doubtless caused the abandonment of some of the beetles by the wasps, since at the party's approach wasps were observed to drop larger specimens of their prey and fly away. Other agencies probably also caused abandonment, however, for a few beetles were found near another colony of wasps in a field not far away. Whether or not other species of wasps present were interfering with the activity of *Cerceris fumipennis* was not determined. Many of the beetles were alive but paralized. *C. fumipennis* was the only species

observed with the Buprestidae and perhaps had brought in all of the beetles found.

The number of specimens of the twenty species of Buprestidae picked up from the surface of the roadway—the wasps burrows were not disturbed—on this and two later visits to the spot were as follows:

51 *Buprestis rufipes* (Oliv.)
26 *Dicerca lurida* (Fab.)
12 *Dicerca americana* (Hbst.)
8 *Buprestis fasciata* Fab.
6 *Dicerca punctulata* (Schon)
5 *Buprestis striata* Fab.
5 *Chrysobothris femorata* (Oliv.)
3 *Dicerca nuttalli* var. *consularis* Gory
3 *Buprestis lineata* Fab.
3 *Actenodes acornis* (Say)
2 *Buprestis maculipennis* Gory
2 *Chrysobothris sexsignata* (Say)
2 *Chrysobothris verdigripennis* Frost
2 *Agrilus bilineatus* (Web.)
1 *Dicerca tuberculata* (Cast.)
1 *Chrysobothris blanchardi* Horn
1 *Chrysobothris dentipes* (Germar)
1 *Chrysobothris floricola* Gory
1 *Chrysobothris lesueuri* Cast.
1 *Agrilus arcuatus* (Say)

136 specimens of Buprestidae (20 species).

This list of Buprestidae includes several which according to our records had not previously been taken in South Carolina and while of biological interest it is also of considerable economic significance to those interested in forests and forest entomology.

The writer gratefully acknowledges his indebtedness to Miss Grace Sandhouse of the United States National Museum for determinations of the Hymenoptera and to Mr. J. N. Knull of the Pennsylvania Forest Research Laboratories for determinations of the Buprestidae.

Flight of Corixids (Hemip.: Corixidae).

An immense number of *Corisella dispersa* (Uhler) came into the city of Davis, California, during the evening and night of June 23, 1931. After arrival, they were attracted to the street lights until the air looked as during a heavy fog. Many of the insects died at each light, piling up to a depth of 2-3 inches. The temperature was high (90° F), with no wind movement. The breeding place of these migrating individuals is unknown to me.

Flights of Corixids have been recorded before but the interesting thing concerning this flight is the distance apparently traveled. At this season no lakes or streams containing water are close. The Sacramento River with its sloughs is over ten miles away in an air line. No other such flight has been observed during my nine years of residence here.—GEORGE H. VANSELL.

Noctuidae of Northern Georgia and Tennessee (Lepidoptera).

By A. Glenn Richards, Jr.

(Continued from page 252.)

Subfamily Sarrothripinae.

Characoma nilotica Rogenh. Common July-Aug.; Monteagle rather common June-Sept., one 26-X-30. Two specimens of a variant of this protean species were taken at Monteagle (16-VII-30 & 1-IX-29) which is not mentioned by Hampson among his "*abs.*". They each have rather uniform gray wings with two longitudinal black streaks extending the length of the wing (now in Cornell Coll. & U. S. N. M.).

Sarrothrips revayana lintnerana Speyer. 29-V-28; Monteagle in June.

Baileya ophthalmica Gn. (*dornitans* Gn. & *levitans* Sm. seem best placed as synonyms of this since the superficial characters intergrade hopelessly and the genitalia offer no characters; I am not familiar with *australis* Grt., but the figures indicate that it belongs in this species also.) Monteagle, common in June, uncommon in July.

Subfamily Catocalinae.

*Euparthenos nubilis Hbn. Aug. '28 (only specimen); Monteagle June-Aug. One variant from Monteagle (13-VI-30) has only half the usual amount of yellow on the hind wing (now in U. S. N. M.).

Allotria elonympha Hbn. 14-VI-26, rare; Monteagle rather common in Sept.

Parallelia bistriaris Hbn. Common June-Aug.

Caenurgia convalescens Gn. Common March, June & Aug.; Monteagle rather common in late Aug.

C. crassiuscula Haw. Common at Athens & Monteagle May-Sept.

Pelamia latipes Gn. Rather common Aug.-Oct.; Monteagle 11-V-30 & 9-IX-29.

Phurys lima Gn. Early April-June, rare.

P. bistrigata Hbn. June & Aug., rare.

Celiptera frustulum Gn. July-Aug., common; Monteagle April & Aug.

Argyrostrotis anilis Dru. May-June; Monteagle Aug.-Sept.; rare.

Zale lunata Dru. June-July; Monteagle May & Sept., rather common.

Z. UNDULARIS Dru. June '29; Lake Rabun, Ga., 11-VII-26.
Z. LUNIFERA Hbn. April-Sept.
†Z. BETHUNEI Sm. Monteagle ♀ 23-VI-30 (now in U. S. N. M.).
Z. OBLIQUA Gn. 5 & 6-V-27; Monteagle 29-VI-30.
†Z. CINGULIFERA Wlk. 8-IV-29.
†Z. HORRIDA Hbn. Monteagle 12-VII-30.

SUBFAMILY PANTHEINAE.

†COLOCASIA PROPINQUILINEA Grt. Monteagle 20-IV-30.

SUBFAMILY PLUSIINAE.

AUTOGRAPHA FALCIFERA Kirby. June-Aug.
*†A. EGENA Gn. 17-VI-28 & 6-VIII-28.
A. VERRUCA Fabr. July-Aug., common.
A. BRASSICAE Riley. June-Sept. very common; Monteagle same.
A. BASIGERA Wlk. Aug.-Sept., rather common; Monteagle 4-IX-29.
A. OXYGRAMMA Geyer. Common July-Aug.; Monteagle 31-VIII-29.
A. BILOBA Steph. May & June, rather common; Monteagle 20-VII-30.
A. oo Cram. (= ROGATIONIS Gn.). Rather common July-Oct.
A. PRECATIONIS Gn. Odd specimens in March, Aug. & Oct.; Monteagle July-Oct., not common.
A. OU Gn. Common April-Sept.; Monteagle June-July, rare.
†PLUSIA AEREA Hbn. One specimen at Athens without date.

SUBFAMILY EREBINAE.

RAPHIS ABRUPTA Grt. April & Aug., very uncommon; Monteagle rare in June & July.
MELIPOTIS JUCUNDA Hbn. July-Aug., rare.
†SYNEDA LIMOLARIS Geyer. Monteagle 9-X-30.
PHOBERIA ATOMARIS Hbn. 26-IV-27; Monteagle 17-IV-30.
PANAPODA RUFIMARGO Hbn. Uncommon in April.
P. R. f. CARNEICOSTA Gn. April & July, this is the common form here; Monteagle June-July. Many intermediates, and several in which the discal spot on the fore wing is somewhat suffused.
ANTICARSIA GEMMATILIS Hbn. Sept.-Oct., common in some seasons.
†ANTIBLEMMA INEXACTA Wlk. ♀ 18-V-29.
STRENOLOMA LUNILINEA Grt. May & June, rare; one near Monteagle 11-V-30.

BENDIS (= TRAMA) DETRAHENS Wlk. April-May, not common.

†EREBUS ODORA L. One in May '27.

*CALPE CANADENSIS Beth. Smithsburg, Md. 7 & 8-VI-21 (F. M. Brown).

†SCOLIOPTERYX LIBATRIX L. One specimen at Athens, no date.

PLUSIODONTA COMPRESSIPALPIS Gn. June-July, common in some seasons.

*†HYPSOROPHA MONILIS Fabr. ♀ 18-IV-27; Monteagle ♂ 17-IV-30 (fresh).

H. HORMOS Hbn. April-Aug.; Monteagle June & July, not uncommon.

ALABAMA ARGILLACEA Hbn. Very abundant.

ANOMIS EROSA Hbn. June-Oct., rather common.

SUBFAMILY HYPENINAE.

SCOLECOCAMPA LIBURNA Geyer. July-Aug., uncommon.

GABARA (= EUCALYPTRA) sps. Monteagle in June & July, and Catoosa Co., Ga., in late Aug. Several species including *bipuncta* Morr.

ISOGONA NATATRIX Gn. Rare in April & May.

PHIPROSOPUS CALLITRICHOIDES Grt. Uncommon in April & May; one very dark, grey-brown specimen with the marking indistinct 6-V-29 (now in U. S. N. M.).

*†PARAHYPENODES QUADRALIS B. & McD. Lake Rabun, Ga. (in the mountains) 13-VII-27. Described recently from Canada, and I have seen specimens from New York and New Hampshire, but never further south. It is a rare insect, easily overlooked, but seemingly should be found all along the Alleghany chain.

*†DIALLAGMA LATIORELLA Wlk. (= LUTEA Sm.) 9-VIII-29 & 3-IX-29. "Known only from Florida" (Grossbeck's state list).

PLEONECTYPTERA PYRALIS Hbn. June-Aug., uncommon.

P. P. f. GEOMETRALIS Grt. March & April, uncommon. One specimen intermediate to these types 2-VII-29.

†P. HISTORIALIS Grt. 22 & 24-IV-29.

PHYTOMETRA SEMIPURPUREA Wlk. May, rare; Monteagle April, June & Sept., rare.

†HORMOSCHISTA LATIPALPIS Wlk. (= PAGENSTECHERI Moesch.). 3-IX-28; Monteagle 2-IX-29.

†OXYCILLA MALACA Grt. Monteagle 21-VII-30.

*†O. MITOGRAPHA Grt. 11-VI-29. The types were taken in Central Alabama in August, and described in 1873. I

know of no others having been taken since (this specimen has been deposited in the U. S. N. M.).

PHALAENOSTOLA LARENTIOIDES Grt. Rare in Sept.; Monteagle 15-VI-30 (2).

PANGRAPTA DECORALIS Hbn. Uncommon May & June; Monteagle very common in woods June-Aug.

†SPARGALOMA PERDITALIS Wlk. Monteagle 15-VI-30.

†DYSPYRALIS NIGELLUS Stkr. 9-VIII-29.

METALECTRA DISCALIS Grt. Rather common in July; Monteagle in June.

M. QUADRISIGNATA Wlk. (= CONTRACTA Wlk.). April & June; Monteagle June & Aug., not common.

M. TANTILLUS Grt. May-Aug., uncommon.

M. MONODIA Dyar (synonym of TANTILLUS ??) May-July, uncommon.

EPIZEUXIS AMERICALIS Gn. April, July & Aug. (only three specimens).

E. AEMULA Hbn. 21-VI-28; Monteagle common June-Aug.

E. ROTUNDALIS Wlk. 29-V-29; Monteagle common June-Sept.

E. LUBRICALIS Geyer. Athens & Monteagle June-Sept.

†E. MAJORALIS Sm. Monteagle 10-VI-30.

ZANCLOGNATHA LITURALIS Hbn. Lake Rabun, Ga. 10-VII-28; Monteagle 14-VI-30.

Z. CRURALIS Gn. 27-V-28.

Z. JACCHUSALIS Wlk. (= MARCIDILINEA Grt.). Monteagle rare in July & Sept.

*†CHYTOLITA MORBIDALIS Gn. Monteagle 6-VI-30.

*†C. PETREALIS Grt. Monteagle 28-VI-30, and the spotted form 25 & 28-VI-30.

RENIA SALUSALIS Wlk. May-Aug.; Monteagle common June-Sept.

R. DISCOLORALIS Gn. May-June; Monteagle common June-Aug.

R. FLAVIPUNCTALIS Geyer. Lake Rabun, Ga. 12-VII-27; Monteagle June-Aug.

R. SOBRIALIS Wlk. Monteagle 6 & 8-VI-30.

BLEPTINA CARADRINALIS Gn. May-July; Monteagle April-Aug., common.

B. INFERIOR Grt. Rare in Sept.

*B. SANGAMONIA B. & McD. Known only from the holotype ♂ taken at Decatur, Illinois (May 8-15) and one other specimen also in the Barnes collection. Monteagle 24-VI-30 and a series of nearly 40 specimens late July-middle Aug., 1931. Entire series compared with type by author.

TETANOLITA MYNESALIS Wlk. July-Sept.; Lake Rabun, Ga., 24-VI-28; Monteagle June-Aug. common.

T. FLORIDANA Sm. 18-VIII-29 & 8-IX-29.

PHALAENOPHANA PYRAMUSALIS Wlk. Uncommon April & May; Lake Rabun, Ga., 24-VII-28; Monteagle April-July.

LASCORIA AMBIGUALIS Wlk. 5-IV-29, 18-VII-28, common Aug.-Sept.

PALTHIS ANGULALIS Hbn. Rather common April-Sept.; Monteagle June-Sept.

P. ASOPIALIS Gn. 12-VIII-28 & 8-X-29; Lake Rabun, Ga., 4-VII-28.

†DERCETIS VITREA Grt. One at Athens, no date.

†SALIA INTERPUNCTA Grt. 24-VI-29.

BOMOLOCHA BALTIMORALIS Gn. Common in April.

†B. PALPARIA Wlk. (= SCUTELLARIS Grt.) 6-IV-29 & 27-VII-29.

B. ABALINEALIS Wlk. April-Sept., rather common.

B. DECEPTALIS Wlk. 6-VIII-29; Monteagle 24-VI-30.

B. MADEFACTALIS Gn. Common April-Aug.; Monteagle 31-VII-30.

†B. SORDIDULA Grt. Monteagle 5-VIII-30.

†ANEPISCHETOS MINUALIS Gn. ("BOMOLOCHA CITATA Grt." of B. & McD. list) 22-VII-29 & 9-IX-28.

PLATHYPENA SCABER Fabr. Athens & Monteagle, common April-Sept.

*†An unknown Hypenid apparently representing a new species and new genus taken at Athens. It looks like a small EPIZEUXIS species, but has no areole. (This specimen also has been deposited in the U. S. N. M.).

ARCTIIDAE.

SUBFAMILY NOLINAE.

CELAMA TRIQUETRANA Fitch. Monteagle common in April.

SUBFAMILY ARCTIINAE.

*†HALISIDOTA LONGA Grt. 3-IX-28 (now in Cornell Coll.). "Known only from Florida" (Grossbeck's state list).

†EUBAPHE LAETA Guer. 14-VI-26.

†E. OPELLA Grt. 3-VIII-26.

NOTODONTIDAE.

HETEROCAMPA SUBROTATA Harv. Rare in Sept.

H. BILINEATA EXSANGUIS Dyar. Aug.-Sept., Monteagle in July.

LASIOCAMPIDAE.

ARTACE PUNCTISTRIGA Wlk. Several at Athens and Monteagle in June, rare.

MALACOSOMA AMERICANA Fabr. Rare at Athens.

†HETEROPACHA RILEYANA Harv. 7-IV-29, 9-VII-28 & 1-VIII-29.

DREPANIDAE.

*†ORETA ROSEA Wlk. Monteagle 4-IX-29 (now in U. S. N. M.).

LACOSOMIDAE.

†LACOSOMA CHIRIDOTA Grt. 1 ♂ & 10 ♀ ♀ at Monteagle in June '30.

GEOMETRIDAE.

†EXELIS PYROLARIA Gn. Monteagle 9, 25, 28-VIII-30.

PYRALIDAE.

DIAPHANIA SIBILLALIS Wlk. Quite common late July-Aug. in some seasons.

*†CRAMBUS BIDENS Zeller. Monteagle 15-VI-30 (2) (now in Cornell Coll. & U. S. N. M.).

The Nymph of Enallagma basidens Calvert (Odonata: Agrionidae).

R. D. BIRD, Dept. of Zoology, University of Oklahoma, Norman, Oklahoma.

Enallagma basidens Calvert occurs commonly in Oklahoma. As its nymph appears to be undescribed (Byers '28)* the following description has been drawn up from a number of reared specimens.

Color: buff or greenish.

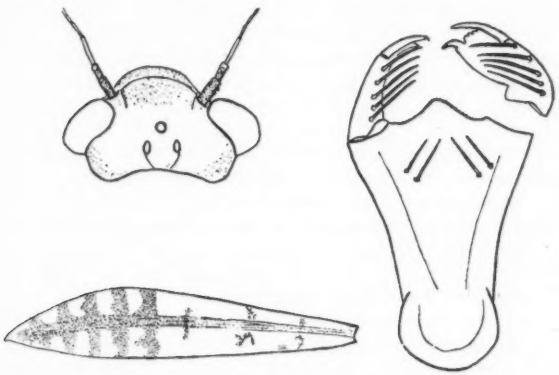
Head: caudo-lateral angles hemispherical as in figure, with small inconspicuous setae. Antennae 6-segmented, the first two segments dark except distal third of the second, second slightly shorter, third the longest, fourth shorter, fifth and sixth still shorter and equal. Labium extending caudad of procoxae, with two mental setae and five laterals as is shown in the figure.

Thorax: legs lighter in color except dark ring on each femur and tibia a short distance from their articulation which is also dark. A few short black dashes along the outer side of each

* BYERS, C. FRANCIS—The unknown nymphs of N. A. Odonata. Can. Ent. 60:4-6, 1928.

tibia. Metathoracic wing cases reach to end of third abdominal segment.

Abdomen: gradually tapering, nonsetaceous, covered with numerous black spots giving a freckled appearance. Gills as in figure with five transverse black bands on the apical half. Sometimes a slight development of a sixth band.



Measurements of mature nymphs: length, 18 mm.; length of abdomen, 11 mm.; length of gills, 5.75 mm.; width of gills, 1.05 mm.; length of metathoracic wing-cases, 3.5 mm.; length of mentum, 4 mm.

Habitat: the nymphs have been found in clear, small, spring-fed streams with rocky or sandy bottoms. They crawl about watercress or other plants where there is a gentle current of water.

Note on Odynerus bermudensis, with a Description of the Male (Hymenoptera: Vespidae).

By J. Bequaert, Harvard Medical School,
Boston, Massachusetts.

Odynerus (*Stenodynerus*) *bermudensis* J. Bequaert was described in the Annals of the Entomological Society of America for 1929 (vol. XXII, p. 578). It is thus far the only truly indigenous diplopterous wasp known from the Bermudas. A

pair of this species has recently been found in the collections of the United States National Museum.

Male (undescribed).—Length (h.+th.+t. 1+2): 5.5 mm. Agrees structurally with the female, except as follows: Head, seen in front, subcircular, not higher than wide. Cheeks narrower in their upper half, where they are much narrower than the upper part of the eye in profile. Inner orbits nearly twice as far apart on the vertex as at the clypeus. Interocellar depression not more pronounced than in the female. Clypeus wider than long, in outline irregularly pentagonal, the base being twice as long as each of the upper sides, the upper and lower sides nearly equal; its anterior, free portion about as long as the upper, interocular part; its truncate apex about one-fifth of the maximum width of the clypeus, with a deep, even inward curve, preceded by a slightly depressed area; its apical angles well marked, but bluntly rounded off and not raised. Antenna elongate; flagellum over three times the length of the scape; third antennal segment one and one-third times the length of the fourth; fourth to ninth subequal and distinctly longer than wide; tenth about as wide as long; eleventh longer than wide, slightly excavated on the under side; twelfth small, longer than wide, less than half the length of the eleventh; thirteenth (hook) moderately thick, about the length of the eleventh, scarcely curved, slightly and very gradually narrowed to the blunt and somewhat flattened apex, which reaches the tip of the tenth segment. Abdomen more slender than in the female.

Sculpture as in the female; but the clypeus with the punctures larger and more evenly distributed and with the irregular striation barely indicated.

Black. Most of the upper side of scape, tip of mandibles, most of the legs (except the tibiae), most of the propodeum, and nearly the entire first abdominal segment, ferruginous to red. Clypeus, most of the mandibles, broad under side of scape, interantennal ridge, most of the ocular sinuses (extending downward along the inner orbits), an elongate spot on the upper half of the outer orbit, a transverse spot on each side of the anterior margin of the pronotum (more or less divided by a ferruginous blotch), postscutellum, most of the upper plate of the mesepisternum, tegulae (except the ferruginous center), post-tegulae, tibiae (somewhat ferruginous on the underside), hind margins of first and second segments as in the female, small lateral free spots on the second tergite (suffused with ferruginous along the edges), narrow hind margin of fourth tergite, and traces of a margin on fifth tergite, pale sulphur

yellow. Wings as in the female, slightly and fairly uniformly smoky throughout, with a faint purplish tinge.

Allotype.—Bermuda, May 13, 1909 (F. M. Jones.—U. S. N. M.).

Since the female holotype was stylopized, it is interesting to compare it with a second female, not parasitized, obtained by Mr. F. M. Jones on May 10, 1909. After a careful comparison I am unable to find any differences in structure or sculpture between these two specimens. There are, however, a few differences in color. Mr. Jones' insect is in some respects more like the male described above, since it has a distinct yellow apical margin on the fourth tergite (traces of this may be seen on the holotype). The lateral yellow spots on the second tergite are large and only slightly bordered with ferruginous. The clypeus is black, with two rather indistinct ferruginous blotches on the basal third. The propodeum is blotched with ferruginous on the sides. This second female measures 6 mm. only, from the frons to the apex of the second tergite.

It seems improbable that the slight differences in color exhibited by the holotype were due to stylopization, unless perhaps the extension of the yellow over the basal third of the clypeus might be attributed to the action of the parasite.

Catopsilia philea in Pennsylvania. (Lepid.: Pieridae).

In the July 1931 number of ENTOMOLOGICAL NEWS, Mr. Haskin, of Waterford, Connecticut, states that he captured a specimen of *Catopsilia philea* in that State on August 26, 1930. Evidently *philea* wandered out of bounds that year for the writer took one specimen in front of the zoology building of the Pennsylvania State College, State College, Pennsylvania, on August 8, 1930. The specimen flew around the gladiolus flowers avoiding the red and darkly-colored blossoms but alighting on all the yellow and orange ones. The writer watched the specimen for over an hour before capturing it. Some other species of this group when they are seen far from their natural habitat are most elusive, stopping only a short time, and then flying on. This specimen, however, was in no hurry and seemed more like a resident than a migrant. It would be interesting to know just what factors were instrumental in the dispersion of this species during 1930.—HARRISON M. TIETZ, Dept. Zoology and Entomology, Pennsylvania State College.

New Texas Sarcophaginae (Diptera: Calliphoridae).

By DAVID G. HALL,[1] Bureau of Entomology,[2] Charleston, S. C.

Among a large number of Sarcophaginae from Texas sent to the author for determination during the past few years were the four species described below.

Most of these flies were collected in ecological traps set for the screw-worm fly *Cochliomyia macellaria* Fab. Specimens obtained in such traps are usually rubbed and in general poor condition. Numerous specimens of the species herein described were not saved, and the actual abundance of the species is not shown in the type series.

Comasarcophaga[3] n. gen.

Black medium sized species with the usual Sarcophagid appearance.

Male.—Head length at antennae and vibrissae about equal; vibrissae above the oral margin and slightly approximated; parafrontals with numerous small irregular scattered hairs; antennae and palpi red; second antennal joint bright red, third joint darkened above; arista with very short pubsecence at base only, not longer than diameter of arista. Chaetotaxy as in following description.

This genus shows closest affinities to the *Agria-Hypopelta* group, but can be instantly separated from these by the nearly bare arista, which appears in *Brachycoma, Neophyto* and *Amobia.* The head shape of these is entirely different from that of the genus herein described.

Genotype and sole species, *texana,* new.

Comasarcophaga texana, n. sp.

Male. (Fig. 1)—Front 0.376 of head width (average of four specimens which measured respectively 0.412, 0.366, 0.333, and 0.396; parafrontals and parafacials silvery gray pollinose.

[1] Thanks are due and herewith gratefully given to Mr. E. W. Laake, Mr. E. C. Cushing, Mr. A. E. Parish, and Mr. E. F. Knipling, who have made the trap collections at Menard, Texas; to Mr. H. J. Reinhard, who sent me his series of *Comasarcophaga texana,* new genus and species, for study and description; and to Mr. R. A. Roberts, who sent a collection of reared Sarcophaga from Mexico and southern Texas for determination.

[2] Contribution from the Division of Insects Affecting Man and Animals.

[3] **Κόμη,** hair; **σάρκο φάγος,** flesh devouring.

the former with the usual row of slight hairs below near eye; the parafacials with numerous slight hairs over the entire surface; frontal bristles about eight, diverging sharply below to about the middle of the second antennal joint; antennae red; third segment darkened apically and above; arista with ex-

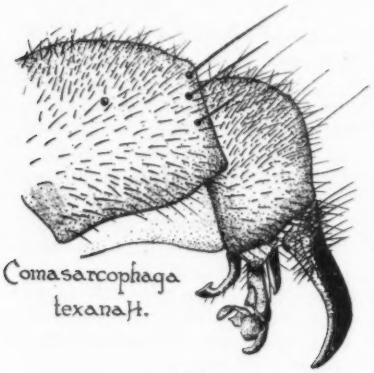


Fig. 1

Fig. 2

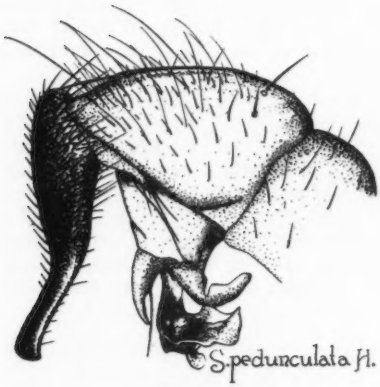


Fig. 3

Fig. 4

tremely short hairs, almost microscopic; third segment about two and one-half times second, reaching almost to the vibrissae which are approximated and above the oral margin; palpi yellow, proboscis black, both normal; bucca about one-third the eye height; postocular bristles in three rows; around the middle

and below with numerous pale yellow hairs; outer verticals not differentiated.

Thorax with the usual three to five black stripes; anterior dorsocentrals two, postsutural dorsocentrals four, prescutellars slight, sternopleurals two, scutellum with two marginals, one subapical and one apical.

Abdomen with the usual grey tessellation; median marginal and lateral bristles on the second and third segments, fourth with a marginal row of about 18; fifth sternite composed of two slightly divering yellow arms, the anterior and inside edges covered with a brush thickly set with small black setae which grow longer posteriorly.

Hypopygium small, first segment red, slightly gray pollinose with a marginal row of about eight long bristles; second segment shining red; forceps reddish at base, black at tips, gradually curving anteriorly into sharp points, divergent in rear view; accessory plate small, yellow; posterior clasper short, black, hooked at tip with a short seta on anterior edge just before hook; anterior clasper black, strongly hooked anteriorly; penis evidently composed of two segments, the first joint hidden and short, the second yellow, ending in several black processes.

Wings hyaline; costal spine rather large; third costal segment about equal to fifth and sixth; first vein bare, third with setulae almost to cross vein; legs black, middle tibia with two anterodorsal bristles, middle femur with comb, both middle and hind tibiae with long villosity.

Female.—Front 0.475 of head width in single specimen; like male in chaetotaxy, except a small third sternopleural, fairly large prescutellars, no apicals on scutellum, no median marginals on second abdominal segment, a small third anterodorsal bristle on the middle tibia, and usual female differences; genital segments reddish; two main lateral plates, cleft dorsocentrally, pointed posteriorly, the ventral edge with a row of bristles, the spiracle located one-third closer to the ventral than to the dorsal edge; fifth and sixth sternites elongated with numerous black hairs.

Types.—Fifteen male and one female specimens collected as follows: one male, October 1, 1921; four males, April 27, 1929, two males, April 26, 1929, one male and one female April 30, 1929, College Station, TEXAS (H. J. Reinhard); one male, June 13, 1908, Cotulla, TEXAS (in cotton fields) (E. S. Tucker); one male, June 11, 1904, Victoria, Texas (Pratt); one male, June 19, 1905 (A. C. Morgan); one male, June 1, 1917,

Helotes, Bexas County, TEXAS; one male, June 25, 1929, Coachella, CALIFORNIA (in trap baited with decaying liver) (Hall); two males, June, 1929, Menard, TEXAS (from traps baited with decaying meat) (E. C. Cushing).

Holotype and *Allotype* from College Station, TEXAS, in U. S. National Museum. Two *paratypes* in U. S. National Museum, and four each in the American Museum of Natural History, in collections of H. J. Reinhard and the author.

Sarcophaga semimarginalis, n. sp.

Male. (Fig. 2)—Front, 0.215 of head width; parafrontals and parafacials silvery gray pollinose, the latter with the usual row of minute hairs below near eye; frontal bristles about 11 in number, reaching to about the middle of the second antennal joint and widely diverging in the lower two or three; orbitals and outer verticals absent; antennae black, third joint hardly twice the length of the second, and reaching four-fifths the distance to the vibrissae, which are approximated and above the oral margin somewhat less than the length of the second antennal joint; arista with rather short plumosity for three-fifths its length; palpi and proboscis black, ordinary; bucca one-fourth the eye height, black, thinly whitish pollinose, with only black hair before the metacephalic suture; back of head with three rows of postocular cilia, and with pale hair around the middle and below.

Thorax with the usual three to five black stripes; anterior acrostichals absent, prescutellars one, anterior dorsocentrals three, postsutural dorsocentrals four, sternopleurals three, scutellum with two marginals, one subapical and one apical.

Abdomen tessellated, three shifting black stripes, somewhat golden pollinose in certain lights; first and second segments with lateral bristles only; third with a median marginal pair; fourth segment red and with a submarginal row of approximately 16 bristles, the two median ones being about one-fourth the total length of the visible segment in front of the margin, the others gradually becoming marginal laterally and below. Fifth sternite reddish, divided, the two arms diverging "V"-like, the inside margins covered with numerous hairs.

Terminalia quite small, red; first segment dark basally, with numerous black hairs, none bristly; second segment with numerous long hairs, globose, forceps black, with long sinuating teeth at tips, posteriorly covered with long curling hair; genital parts as figured.

Wings hyaline; costal spine small; third costal segment about

as long as fifth; first vein bare, third with setulae about halfway to the cross vein; bend in fourth vein more acute than usual.

Legs black; middle femur with comb; middle tibia with one antero-dorsal bristle; hind tibia with long sparse villosity.

Female.—Unknown.

Related to the species *Sarcophaga subdiscalis* Aldrich, Sarcophaga and Allies, 1916, p. 219, fig. 104, from which it differs in the extension of red on the fourth abdominal segment, the much shorter bucca, the lack of red or brown in the forceps and in the shape and character of the genital parts.

Described from two male specimens trapped at Menard, TEXAS, July 15-24, 1929 (Cushing), and July 11-21, 1930 (Parish).

Types:—Holotype in the U. S. National Museum. *Paratype* in the author's collection.

Sarcophaga pedunculata, n. sp.

Male. (Fig. 3)—Front, 0.271 of head width (average of three specimens 0.272; 0.250; 0.292); parafrontals and parafacials yellowish pollinose; the former with a row of minute hairs below near the eye, several rather coarse; frontals about 10, slightly diverging below to about the middle of the second antennal joint; antennae black, third joint two and one-half times the length of the second, and reaching three-fourths the distance to the vibrissae, which are normal and at the oral margin; arista with long plumosity for three-fifths its length; facial ridges with short strong setae one-third the distance from the vibrissae to the base of the antennae; outer verticals absent; bucca one-third the eye height and with abundant black and pale hairs before the metacephalic suture; back of head with two rows of postocular ciliae and with numerous pale hairs around the middle and below.

Thorax with the usual three-to-five black stripes; the pleurae with yellowish cast; anterior acrostichals absent; anterior dorsocentrals two; prescutellars one, posterior dorsocentrals four, sternopleurals three. Scutellum with two marginals, one subapical and a very pronounced patch of long whitish yellow hair on each side between the marginals.

Abdomen silvery gray pollinose, tessellated, with three shifting black stripes; first and second segments with lateral bristles only; third with a median marginal pair; fourth reddish, with a marginal row of about twelve bristles; the second, third, and

fourth segments with long hair below, increasing in abundance posteriorly. Fifth sternite divided, elongate, reddish brown, with numerous short hairs.

Hypopygium red, somewhat pollinose; first segment red, short, with scattered hairs; second segment red, curiously elongate, with numerous scattered hairs; and several long bristles above on the hump; genital characteristics as figured.

Legs black, middle femur with comb; middle tibia with one long antero-dorsal bristle; hind tibia without villosity.

Wings hyaline; no costal spine; third costal segment about as long as the fifth and sixth together; first vein bare; third with a number of setulae.

Female.—Chaetotaxy as in male, except the usual female differences.

This species is unlike any previously described. It belongs to the provisional "H" Group and the genitalia are very distinctive. The scutellar patches of light colored hair should make it readily determinable in both sexes.

Described from 100 males and females reared by Mr. R. A. Roberts at Victoria, TEXAS, March, 1931; three males, Brownsville, Texas, April 14, 1927 (T. C. Barber); one male, Reagan Wells, Texas, June 27, 1924 (E. W. Laake); and one male, Las Parras, BAJA CALIFORNIA, (W. M. Mann).

Types;—Holotype and *allotype,* Victoria, TEXAS, in the U. S. National Museum. Paratypes in the U. S. National Museum and in the collections of Mr. R. A. Roberts, Mr. E. W. Laake, and the author.

Sarcophaga scelesta, n. sp.

Male: (Fig. 4)—Front very narrow, 0.237 of headwidth (average of five specimens 0.224; 0.200; 0.261; 0.250; 0.251); parafrontals and parafacials coarsely dusted with whitish yellow pollen, the former with the usual row of minute hairs below near eye; frontal bristles about 11, slightly diverging below to about the middle of the second antennal joint; orbitals absent; outer verticals distinct; antennae black, third joint twice second, reaching three-fourths the distance to the vibrissae, which are normal and at the oral margin; palpi and proboscis black, ordinary; arista with long plumosity for over three-fifths of its length; bucca about one-fourth the eye height, with black hair; back of head with one distinct row of postocular cilia and numerous dark hairs around the middle and below.

Thorax with the usual three to five black stripes; anterior acrostichals not larger than surrounding hairs; prescutellars rather long; anterior dorsocentrals three, postsutural dorsocentrals four, sternopleurals three; scutellum with two marginals, one subapical and one apical.

Abdomen with three changeable black stripes, tessellated; first and second segments with lateral bristles only; third with median marginals; fourth with a marginal row of about 18.

Hypopygium black, very small, thinly grayish pollinose, with scattered hairs; first segment with a posterior row of about six bristles; genital characteristics as figured.

Legs black; middle femur with a short comb; middle tibia with one antero-dorsal bristle; hind tibia without villosity.

Wings hyaline; costal spine absent; third costal segment about as long as fifth; first vein without setae; third vein hairy almost to the cross-vein.

Female:—No apicals on scutellum, otherwise as in male except for usual female differences.

This species belongs to the provisional "G" Group, having the genitalia of the male black, four posterior dorsocentrals, and the hind tibia without villosity. It differs from any described species known to the author in the genital features.

Described from a male selected from a long series of males trapped during the fall of 1929, at Menard, TEXAS, by Mr. Laake and Mr. Cushing; one male, Itaquaquecetuba, Sao Paulo, BRAZIL, January 1929 (Townsend); one male and one female, Brownsville, Texas (Townsend); and two males from Sao Paulo, Brazil, sent to the author by Dr. R. R. Parker.

Types:—*Holotype* (Menard, Tex.) and *allotype* (Brownsville, Tex.) in the U. S. National Museum. Paratypes in the collections of Mr. E. W. Laake, Dr. R. R. Parker, and the author.

Rex Research Foundation.

Intensification of man's perpetual warfare on his insect enemies is forseen as the result of the establishment in Chicago of the Rex Research Foundation, Chicago Bank of Commerce Building.

The Foundation is an expansion of the Rex Research Fellowship created sixteen years ago at Mellon Institute of Industrial Research, Pittsburgh, Pa., by F. O. Moburg, of Toledo,

Ohio. Dr. O. F. Hedenburg, who has headed the work of the Fellowship from the beginning, now becomes director of the Foundation.

One of the principal objectives of the Foundation, outside of research, will be a program of public education intended to show the necessity of continued warfare against flies and other insect pests that yearly claim thousands of lives in the United States by spreading communicable diseases. In many sections, largely due to the warm, moist weather, and the fact that the public has become indifferent in its fight on the fly, the numbers have increased. With the cooperation of health authorities, the Foundation proposes to teach the public the perils that lurk in the visits of insect pests to the household, and to show the steps to be taken to prevent the spread of disease through these carriers.

"Swat the fly" campaigns kill the fly but leave the germs it carries to spread disease. In their place the Foundation seeks to launch a "chemical warfare" that will effectively rid the household of the fly and also the germs.

E. G. HORST, *Secretary.*

A Night-Flying Butterfly and Some Unusual Locality Records (Lepid.).

The renewed attention recently given to the night flight of diurnal butterflies leads me to record a capture of *Vanessa virginiensis* Drury (*Pyrameis huntera*) (Nymphalidae). The specimen, which from its perfect condition appeared to have emerged not long before capture, was attracted to a light from a second story window at 9:30 P. M. on June 3, 1931. The window faces the garden of my home in a residential section of Milwaukee.

In the January issue of the NEWS Mr. Harold O'Byrne noted the occurrence of *Catopsilia philea* Joh. (Pieridae) in Missouri. A far more northern record of this species was obtained by a friend of mine, Mr. Wm. E. Sieker, who took this species at Baileys Harbor, Door County, Wisconsin on July 19, 1930.

Other unusual locality records worth noting include a specimen of *Aellopos titan* Cramer (Sphingidae), which I caught in Milwaukee, June 24, 1930; a specimen of *Utetheisa ornatrix* Lin. (Arctiidae), also caught in Milwaukee, October 4, 1924; and a specimen of *Alypia langtoni* Couper (Agaristidae), taken at Embarrass, Waupaca County, Wisconsin, July 12, 1926.

ERNST J. DORNFELD, Milwaukee, Wisconsin.

Entomological Literature

COMPILED BY LAURA S. MACKEY UNDER THE SUPERVISION OF E. T. CRESSON, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

The **figures within brackets** [ ] refer to the journal in which the paper appeared, as numbered in the list of Periodicals and Serials published in our January and June issues. This list may be secured from the publisher of ENTOMOLOGICAL NEWS for 10c. The number of, or annual **volume**, and in some cases the part, heft, &c. the latter **within** ( ) follows; then the pagination follows the **colon** :

All continued papers, with few exceptions, are recorded only at their first installments.

*Papers containing new forms or names have an * preceding the author's name.

(S) Papers pertaining exclusively to neotropical species, and not so indicated in the title, have the symbol (S) at the end of the title of the paper.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

☞*Note the change in the method of citing the bibliographical references, as* **explained above.**

Papers published in the Entomological News are not listed.

GENERAL.—Bailey, S. F.—Invaluable words. [4] 63: 197-198. **Bishopp, F. C.**—How insects affect our health and comfort. [76] 1931: 443-445. **Dury, C.**—Obituary. Anon. [Hobbies] 36: 92, ill. **Griffin, F. J.**—The dates of publication of Wood (W): "Index Entomologicus", 1833-1838. [75] 8: 178. **Sclater, W. L.**—Names of new genera and subgenera. [Zool. Record] 67: 20 pp. **Walker, J. J.**—Insects at sea. [8] 67: 211-232, cont.

ANATOMY, PHYSIOLOGY, ETC.—Alfonsus & Braun.—Preliminary studies of the internal structures of Braula coeca. [7] 24: 561-582, ill. **Bigham, J. T.**—The alimentary canal of Asaphes memnonius. [43] 31: 386-395, ill. **Buxton, P. A.**—The measurement and control of atmospheric humidity in relation to entomological problems. [22] 22: 431-447, ill. **Cappe de Baillon, P.**—La descendance des monstres de Phasmides. [59] 15: 316 pp., ill. **Davidson, R. H.**—The alimentary canal of Criocerus asparagi. [43] 31: 396-405, ill. **Ludwig, D.**—Studies on the metamorphosis of the Japanese beetle. (Popillia japonica). [42] 60: 309-323, ill. **Lutz, F. E.**—Notes on the animal life of thermal waters in the Yellowstone National Park. [40] 498: 10 pp. **Melvin, R.**—A quantitative study of copper in insects. [7] 24: 485-488. **Miles, H. W.**—Growth in the larvae of Tenthredinidae. [J. Exp. Biol.] 8: 355-364. **Richardson, Burdette & Eagleson.**—The determination of the blood volume of insect larvae. [7] 24: 503-507. **Sato, H.**—Untersuchungen über die künstliche parthenogenese des seidenspinners

Bombyx mori. [97] 51: 382-394, ill. **Schaefer, P. E.**—The alimentary canal of Sphaeroderus nitidicollis var. schaumi. [43] 31: 406-415, ill. **Steel, A.**—On the structure of the immature stages of the frit fly (Oscinella frit). [35] 18: 352-369, ill. **Swingle, M. C.**—Hydrogen ion concentration within the digestive tract of certain insects. [7] 24: 489-495. **Swingle, M. C.**—The influence of soil acidity on the pH value of the contents of the digestive tract of Japanese beetle larvae. [7] 24: 496-502, ill. **Verlaine, L.**—L'instinct et l'intelligence chez les Hyménoptères. [33] 71: 123-130. **Walker, E. M.**—On the anatomy of Grylloblatta campodeiformis. [7] 24: 519-536, ill. **Wigglesworth, V. B.**—The physiology of excretions in a blood-sucking insect, Rhodnius prolixus. (Hem.). [J. Exp. Biol.] 8: 411-451.

ARACHNIDA AND MYRIOPODA.—***Hilton, W. A.**—Symphyla from North America. [7] 24: 537-553, ill. ***Pelegrín Franganillo, R. P.**—Arácnidos de Cuba. [Mem. Mus. Hist. Nat., Habana] 1: 47-97, ill.

THE SMALLER ORDERS OF INSECTS.—**McDunnough, J.**—The eastern North American species of the genus Ephemerella and their nymphs (Ephemeroptera). [4] 63: 187-197, 201-216, ill. **Setty, L. R.**—The biology of Bittacus stigmaterus (Mecoptera, Bittacusidae). [7] 24: 467-484, ill. ***Traver, J. R.**—Seven new southern species of the mayfly genus Hexagenia, with notes on the genus. [7] 24: 591-621, ill. **Weyer, F.**—Das problem der kastendifferenzierung bei den Termiten. [97] 51: 353-373, ill.

ORTHOPTERA.—***Chopard, L.**—Biospeologica. Insectes Orthoptères. [Arch. Zool. Exp. et Gen., Paris] 71: 389-401, ill. .***Moreira, C.**—Contribuição para o conhecimento dos insectos Dermapteros do Brasil. [Rev. Ent., São Paulo] 1: 257-265, ill.

HEMIPTERA.—***Ball, E. D.**—Some new North American genera and species in the group formerly called Platymetopius (Rhynchota). [4] 63: 216-222, cont. ***China, W. E.**—A remarkable mirid larva from Cuba, apparently belonging to a new species of the genus Paracarnus (Miridae). [75] 8: 283-288, ill. **DeLong & Davidson.**—The genus Agallia—External characters used to distinguish the species injuring economic crops. [43] 31: 377-385, ill. ***Drake, C. J.**—Neotropical Tingitidae. [75] 8: 225-227. ***Drake, C. J.**—The Cornell University Entomological Expedition to South America, 1919 and 1920, scientific results, Number 5, Hemiptera-Tingitidae. [7] 24: 510-514. ***Lawson P. B.**—The genus Drylix in North America, (Cicadellidae). [7] 24:

587-590, ill. **Norland, C.**—List of California Pentatomidae, especially from the South. [13] 23: 45-46. ***Oman, P. W.**—New Jassinae, with notes on other species. [91] 21: 430-436, ill. ***Peters, H. S.**—Two new Mallophaga from two closely related shorebirds. [7] 24: 583-586, ill.

LEPIDOPTERA.—*Bell, E. L.—New species of Yanguna: Lepidoptera, Rhopalocera. [9] 64: 233-236. **Bird, H.**—The Papaipema species of the Pacific coast. [4] 63: 183-187, ill. **Comstock & Dammers.**—Notes on the early stages of four California argynnids. [38] 30: 40-44, ill. **Griffin, F. J.**—On the dates of publication and contents of the parts of Strecker (H), "Lepidoptera, etc," 1872-1900. [75] 8: 257-258. ***Gunder, J. D.**—Some new butterflies. [38] 30: 45-48. **Miller, E. R.**—Athena peleus (Timetes petreus). [39] 15: 34-36, ill. **Rothke, M.**—Einige notizen über vorkommen und lebensgewohnheit von Pieris napi in Nordamerika. [18] 25: 262-263. **Spencer, G. J.**—An important breeding place of clothes moths in homes. [4] 63: 199-200. **Talbot, G.**—On the status of some generic names in the family Pieridae. [9] 64: 227-232. **Wucherpfennig, F.**—São Paulo de Olivença-Borba. [18] 25: 255-258, ill.

DIPTERA.—*Alexander, C. P.—New species of crane flies from South America. (Tipulidae). [7] 24: 622-642. ***Lindner, E.**—Beitrag zur kenntnis der südamerikanischen Stratiomyidenfauna. [Rev. Ent., São Paulo] 1: 304-312, ill. ***Malloch, J. R.**—Flies of the genus Pseudotephritis (Ortalidae). [50] 79, (34): 6 pp. ***Rowe, J. A.**—A revision of the males of the nearctic species in the genus Fabriciella (Tachinidae). [7] 24: 642-678, ill. **Taylor, R. L.**—On "Dyar's Rule" and its application to sawfly larvae. [7] 24: 451-466, ill. ***Townsend, C. H. T.**—New genera and species of American Oestromuscoid flies. (S). [Rev. Ent., São Paulo] 1: 313-354, ill. ***Van Duzee, M. C.**—Dolichopidae of the Canal Zone. [Bull. Am. Mus. Nat. Hist.] 61: 161-205, ill.

COLEOPTERA.—de Basilewsky, P.—Additions et rectifications aux Carabidae du "Coleopterorum Catalogus" de M. E. Csiki. [33] 71: 145-149. ***Blaisdell, F. E.**—Studies in the Melyridae, No. 9 [4] 63: 178-183. ***Borgmeier, T.**—Sobre alguns coleopteros ecitophilos do Brasil (Staphylinidae). [Rev. Ent., São Paulo] 1: 355-367, ill. **Jaynes, H. A.**—Acrotomopus atropunctellus in Argentina sugarcane. [7] 24: 554-560, ill. ***Jeannel, R.**—Biospeologica. Insectes Coléoptères et révision des Trechinae de l'Amerique du nord. [Arch. Zool. Exp. et Gen., Paris] 71: 403-499, ill. ***Luederwaldt, H.**—Novos subsidios para o conhecimento do genero Pinotus (Lamell. Copridae). [Rev. Ent., São Paulo] 1: 298-304, ill.

HYMENOPTERA.—*Cockerell, T. D. A.—A new bee of the genus Andrena from Canada. [4] 63: 200-201. ***Cockerell, T. D. A.**—Descriptions and records of bees. (S). [75] 8: 411-418. **Fernald, H. T.**—Notes on some American Sphecinae. [7] 24: 439-450. **Hicks, C. H.**—Notes on certain bees, with a consideration of the use of the abdomen in nest construction. [4] 63: 4: 173-178. ***Mann. W. M.**—A new ant from Porto Rico. [91] 21: 440-441, ill. ***Santschi, F.**—Fourmis de Cuba et de Panama. [Rev. Ent., São Paulo] 1: 265-282, ill. **Rau, P.**—An additional note on the behavior of hibernating Polistes wasps. [7] 24: 515-518. **Smith & Haug.**—An ergatandrous form in Ponera opaciceps. [7] 24: 507-509, ill.

Dr. Holland's New Butterfly Book.

THE BUTTERFLY BOOK, new and revised edition by W. J. HOLLAND, Sc.D., etc., Doubleday, Doran and Co., New York, 1931. 436 pp. and 77 plates and numerous text figures with over 2000 figures of North American Butterflies. $10. net.

The first edition published in 1898 described and figured about 450 of the then known 650 species of butterflies flying north of the Mexican line. The present volume has been brought up to date and all of the known species are included, involving 25 additional color plates and 4 uncolored.

Dr. Holland has had unusual access to the principal collections in America and through the cooperation of the leading lepidopterists of the country has been able to figure, in addition to the types contained in his own Edwards Collection, practically all of the types or typical butterflies of the North America Fauna. Dr. Holland is to be congratulated on completing this tremendous work and launching it on his 82nd birthday. Only the students will know the amount of painstaking labor involved, a labor of love, however, as all will recognize who have met this learned, kindly gentleman. This book, while offered as a popular work, containing information on the life history, collecting, classification and literature of the subject with lucid descriptions of the species, but free from unnecessary discussion, is, however, a remarkably scientific work, indispensable to the student and specialist, and this volume of the Dean of American lepidopterists will be consulted as long as men and women are interested in nature.

The book is clearly and carefully printed and the colored plates are the best that have been produced so far.

As to the nomenclature, Dr. Holland is conservative and has not accepted all of the findings of what he calls the younger school of entomologists (some of whom are grandfathers) but these things are frequently a matter of individual opinion and

only time and the International Entomological Congress will tell. In the mean time no possible harm can come from labeling a collection with the names used in the Butterfly book; in fact, they are (in my opinion) far more accurate than those used in any recent list before me.

The book should be in the library of every entomologist, will give thousands of others a knowledge of the most beautiful flying things in nature, and will be a great stimulus to the study of the most fascinating things among the insects, the Butterflies.

ROSWELL C. WILLIAMS, JR.

SOCIAL BEHAVIOR IN INSECTS. By A. D. IMMS, M.A., D. Sc., F.R.S. The Dial Press Monographs on Biological Subjects. Lincoln MacVeagh, The Dial Press, Publishers. New York. MCMXXXI. Pp. ix, 117, 20 illustrations. $1.50 This little volume contains a very condensed account of the main features of the nervous structures and of the habits of the wasps, bees, ants and termites, including a brief presentation of current theories of the evolution of the social habit and of the origin of the castes and forms occurring in the social species. It will be of use to those wishing to obtain some acquaintance with the subject without expending the time required to read the more extensive accounts available. In discussing "organic memory", the author has chosen rather poorly in citing as an example (on p. 103) the observation of von Büttel-Reepen that honey-bees will be seen in buckwheat fields only during those hours of the day when nectar secretion is occurring; the assumption being that the bees remember these hours from one day to the next. This phenomenon, as von Frisch has so carefully demonstrated, is better explained on the basis of known instinctive behavior reactions. Bees will cease visiting a source of nectar whenever it becomes difficult or impossible to secure a load. Occasional bees, however, will continue to visit at intervals even an exhausted source, and whenever one or more bees return from such an "inspection", filled with nectar, their appearance in the hive "informs" (in a manner described by von Frisch) the other habitués of that particular source that nectar is again flowing. Thereupon the latter resume their foraging activities which had ceased with the temporary exhaustion of the nectar supply. The absence of some account of the work of von Frisch, which has been so enlightening as regards the mechanism of social behavior as to be beyond comparison with much of the arbitrary theorizing of other recent authors, seems to the reviewer to be a serious omission. Such an account could profitably have displaced other topics less germane to the general subject. The volume contains no bibliography but mention is made of the principal books and memoirs pertaining to social insects.—R. G. SCHMIEDER.

OBITUARY.

The death of CHARLES DURY on July 20, 1931, in his eighty-fourth year, after a few days' illness, has removed from the ranks of American entomology one of its oldest workers. His interests were, however, broader than the branch in which he specialized and by which he is best known among entomologists. He belonged to that old-time group of naturalists—so few in these days of specialization—whose studies embraced the whole field of natural history. In this broader field, his chief interest lay in ornithology; many published papers attest to his careful observations of birds.

Charles Dury was born in Cincinnati, Ohio, November 14, 1847, the son of Francis W. Dury and Louisa M. Gibson. In 1862, Francis Dury settled in the suburb of Avondale (now a part of Cincinnati) and in the immediate vicinity of the original Dury homestead, Charles Dury passed the remainder of his long and active life.

Mr. Dury early acquired a taste for natural history, and in those days, his immediate surroundings offered ample opportunity for the development of his studies. His first active work was in ornithology. To his field observations he added a study of taxidermy; and about 1867, opened a shop for that work, which he carried on some forty years. Many beautifully mounted birds and mammals show his skill in taxidermy, for which he received a number of competitive awards. Early in life he attended the Miami Medical College, but did not carry his studies to completion.

Entomology later increasingly claimed his time and attention, and his collection of insects, particularly of Coleoptera, brought together from all part of the world, is for North American forms, one of the finest and most complete in this country. This collection is left to his son, Ralph Dury, now Director of the Cincinnati Society of Natural History.

Although he published a number of papers on North American Coleoptera and described many new species, these but poorly represent the extent of his knowledge and the wealth of his observations in his chosen field. An authority on the Coleop-

tera, it is the regret of his friends and fellow students that he could not be induced to publish his observations more freely.

An indefatigable collector and observer of nature, Mr. Dury acquired a fund of first-hand knowledge. The benefit of his experience he was always ready to give to others, and through advice and encouragement started many young students along the path to success. The writer of this article will never forget the sympathetic aid given her at the beginning of her entomological studies by this veteran entomologist, nor the opportunity for the exchange of ideas throughout many years.

Among the intimate friends of a long lifetime were such scientists as Alfred Russell Wallace, E. D. Cope, Spencer F. Baird, George Horn, John L. LeConte, Robert Ridgway, Elliot Coues, and a host of others. Entomologists throughout the country will mourn his passing.

Mr. Dury held membership in many scientific societies. He was a charter and life member of the Cincinnati Society of Natural History, its curator of ornithology and entomology, its secretary in 1912 and its president from 1914 until his death. The oldest member and a life member of the Cuvier Press Club, he was the custodian of their collection, a generous donor to the collection, and the preparator of nearly all of the specimens. He had served as president and as secretary of the Ohio Academy of Science; and on the advisory board of the Audubon Society. He was a former member of the American Association for the Advancement of Science, and at the time of his death, a member of the Brooklyn Entomological Society.

His straightforwardness and integrity of character won for him the respect of all; he was a gracious teacher and a faithful friend.

Surviving him are his widow, Mrs. Pearl Welch Dury; two sons, Ralph and Arthur; a daughter, Mrs. Louise Hippert, and two grandsons. To these, his friends and fellow scientists offer their sympathy in the loss they have sustained.

ANNETTE F. BRAUN.

(In Proc. Junior Soc. Nat. Sciences 2 (3): 53-55, Cincinnati, Ohio, July-Sept., 1931.)

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(From the list of his writings in the same Proceedings, pp. 60-63, and the Bibliographies in C. W. Leng's Catalogue of the Coleoptera of America, North of Mexico, 1920, and Supplement of 1927. Except where otherwise stated, they were published in the Journal of the Cincinnati Society of Natural History.)

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The date of mailing the December, 1931, number will be announced on the last page of the issue for January, 1932.

INDEX TO VOLUME LXII.

(* indicates new genera, species, names, etc.)

ALDRICH, J. M. A new Entomological Journal in South America 230
ANONYMOUS. A new Entomological Journal in England.. 231
A scarcity of specialists 191
Additions to the Index to Vol. XLI, 1930..... 28
Bibliographia Odonatologica 246
Congratulations to Dr. L. O. Howard..... 203
Dr. A. B. Klots at Rochester, New York..... 219
Mr. F. H. Benjamin at the U. S. National Museum... 230
Obituaries: Comstock, John Henry 152
Hine, James S. 96
Philiptschenko, Jurius 95
Ris, Dr. Fritz 96
Viereck, Henry Lorenz 268
Wasmann, Father Eric, S. J. 240
Published Writings on Insects by Charles Dury..... 295
The C. F. Adams Collection of Diptera..... 25
BARBER, H. G. Change of address.....5, 79
BARRINGER, P. B. Bites, by Aphis Lion..... 83
BELL, E. L. A new species of Hesperiidae from Jamaica, British West Indies (Ill.)..... 220
BEQUAERT, J. Ceratopogonine Midges on wings of Odonata 82
Note on *Odynerus bermudensis,* with a description of the male 277
BIRD, R. D. The nymph of Enallagma basidens, Calvert (Ills.) 276
BRADLEY, J. C. A correction 130
BRAUN, A. F. Obituary: Dury, Charles..... 293

Brower, A. E. Recapture of marked Cutworm Moths in a trap lantern (with tables) 44
Burke, H. E. Another Entomological Society..... 219
Byers, C. F. Dixie Dragonflies collected during the summer of 1930 (table and list) 113
Calkins, V. F. *Papilio daunus* Boisd. in Scott County, Kansas 111
Calvert, P. P. A list of the existing Entomological Societies in the United States and Canada..... 126
Bites by Aphis Lion 83
Editorial: To authors of papers published in the News 171
Editorial: Entomology at the Convocation Week Meetings 56
Obituaries: Emerton, James H. 95
Ris, Dr. Friedrich (portrait)..... 181
Reviews: A Laboratory Guide to the study of the wings of Insects; 2—Suggestions for the Instructor; 3—The venation of Insect wings 238
Reviews: Demons of the dust 123
The African Republic of Liberia and the Belgian Congo 93
The teaching of the Principle of Homologies to Elementary Classes in Biology, and the use of Phylogenetic series in the Laboratory 238
Thomas Say, early American Naturalist..... 90
Carruth, L. A. The Meloidae of South Dakota..... 50
Cartwright, O. L. Digger Wasps and Buprestidae.... 269
Caudell, A. N. Notes on Blattidae, adventive to the United States 204
Chamberlin, J. C. *Parachernes ronnaii,* a new genus and species of False Scorpion from Brazil (Ills.)..... 192
Chamberlin, R. V. A new Milliped of the genus *Fontaria* from Mississippi 78
On a collection of Chilopods and Diplopods from Oklahoma (Ills.) 97
Cockerell, T. D. A. Contemplated trip to Africa..... 167
Review: Recent advances in Entomology (plate)..... 209
Cole, A. C., Jr. *Typha* Insects and their parasites (with tables) 6, 35

A correction 140
COTTERMAN, C. W. *Archilestes* in Ohio 64
CRAMPTON, G. C. A claim for priority in dividing Pterygotan Insects into two sections on the basis of the position of the wings in repose, with remarks on the relationship of the Insect Orders 130
CRESSON, E. T., JR. Descriptions of new genera and species of the Dipterous family Ephydridae. Paper IX. 104
Paper X. 168
Notes on the *Abstersa*-Group of the genus *Tephritis*, and a description of a new species from California..... 3
(see also Mackey, L. S., and Cresson, E. T., Jr.)
DAWSON, R. W. Report of two cases of Metathetely in Polyphemus larvae, *Telea polyphemus* Cramer. (Ill.) 125
DORNFELD, E. J. A night-flying Butterfly and some unusual locality records 287
FALL, H. C. Review: The Fabrician types of Insects in the Hunterian Collection at Glasgow University (Coleoptera, part 1) 263
FINCH, C. Obituary: Comstock, John Henry..... 153
FROST, S. W. New species of West Indian Agromyzidae 72
GRAENICHER, S. Some observations on the biology of the Sarcophagiñae 227
GUNDER, J. D. Bookseller's separates 257
HALL, D. G. A new *Sarcophaga* from South Carolina (Ill.) 217
New Texas Sarcophaginae (Ill.) 280
HASKIN, J. R. Some unusual occurrences of Butterflies in Connecticut 201
HATCH, M. H. The status of Leng's Classification of the Coleoptera 76
HEBARD, M. The races of *Diapheromera velici* (Ill.)..... 65
HORST, E. G. Rex Research Foundation..... 286
KENNEDY, C. H. Obituary: Hine, James Stewart..... 177
KLOTS, A. B. The generic synonymy of the North American Pieridae 253
KNOWLTON, G. F. Notes on Utah Heteroptera and Homoptera 40, 68

KRAUTH, E. *Parnassius* in the Black Hills, South Dakota 257
LAURENT, P. Notes on *Tremex columba* Linn. 67
LENG, C. Review: Bradley's Manual of the genera of Beetles 88
LEUSSLER, R. A. A new *Melitaea* from Oregon..... 12
LIST, G. M. Rocky Mountain Conference of Entomologists 267
MACKEY, L. S., and CRESSON, E. T., JR. Entomological Literature 29, 59, 84, 119, 141, 172, 205, 232, 258, 288
MACY, R. W. A new Oregon Butterfly (Ill.) 1
MARSTON, L. C., JR. *Dynastes tityus* Linn. in Delaware 28
MONTGOMERY, R. W. Notes on some Butterflies of Northeastern Georgia 109
MUSGRAVE, P. N. A Coleopterous enemy of *Corydalis cornuta* L. 202
O'BYRNE, H. A recent occurrence of *Catopsilia philea* Joh. in Missouri 15
OCHS, G. Relationships of the Gyrinidae..... 55
PARK, O. Abnormal antenna in *Eleodes* (Ill.) 112
PARKER, R. L. Obituary: Crevecoeur, Ferdinand F..... 212
PATE, V. S. L. A new *Belomicrus* from the West..... 77
PAYNE, N. M. Food requirements for the pupation of two Coleopterous larvae, *Synchroa punctata* Newm. and *Dendroides canadensis* Lec. (with tables)..... 13
PETERS, H. S. A new Louse from domestic Chickens (Ill.) 195
RAU, P. Notes on the homing of several species of Wasps 199
The night flight of Diurnal Butterflies..... 24
REHN, J. A. G. Entomology of the Convocation Week Meetings, Dec. 29, 1930, to Jan. 3, 1931..... 57
On *Melanoplus borealis* in Northern Labrador..... 33
REINHARD, H. J. A new species of two-winged Fly belonging to the genus *Acronarista* 26
RICHARDS, A. G., JR. Noctuidae of northern Georgia and Tennessee (with list of species).....247, 271
Sub-sub-specific names in Lepidoptera 213
RITCHER, P. O. An undescribed species of Simuliid larva and the corresponding pupa (Ill.)..... 241

ROBERTS, R. An improvised spreading board for small Moths 256
ROBERTSON, C. Oligolectic Andrenidae 226
RODECK, H. G. Unusual numbers of *Diapheromera veliei* Walsh 2
SCHMIEDER, R. G. Review: Social behavior in Insects... 292
SMITH, M. R. An additional Annotated List of the Ants of Mississippi 16
SNYDER, W. E. A new experience 141
TALBOT, G. The naming of individual variants in Lepidoptera 80
THOMAS, C. A. The predatory enemies of Elateridae. 137, 158
TIETZ, H. M. *Catopsilia philea* in Pennsylvania..... 279
VANSELL, G. H. Flight of Corixids 270
VIGNON, P. Review: Introduction à la Biologie Experimentale 176
WIESMANN, R. The Composition of the head of Insects.. 28
WILLIAMS, R. C., JR. On some Northern Lepidoptera Rhopalocera 157
Review: Dr. Holland's new Butterfly book..... 291
WILLIAMS, S. H. Cerambycinae from Kartabo, Bartica District, British Guiana (list of species and synopsis of four related genera) 222
WILLIAMSON, E. B. *Archilestes grandis* Ramb. in Ohio 63
Common names for Dragonflies 46
Review: A contribution to the knowledge of Florida Odonata 145

GENERAL SUBJECTS

Abnormal antenna 112
Additions to Index, Vol. xli, 1930 28
Animals, Predatory 163
Author's Proofs 171
Biologie Experimentale 176
Birds, Predatory 159
Bookseller's Separates 257
Bowdoin-Baffinland Expedition 33, 157
California Entomological Club 219
"Convocation Week" meetings 56
Demons of the dust..... 123
Entomological Journal, New, in England 231
Entomological Journal, New South American 230
Entomological Literature—29, 59, 84, 119, 141, 172, 205, 232, 258, 288.
Entomological Societies, List of U. S. and Can. 126, 219
Entomology, Recent advances in 209
Hosts, Plant 226
Infestation, Plant...6, 35, 50, 67
Indian Insects, Catalogue..... 55
Insects, Composition of the head of 28
Insects, Fossil 212
Insects, Published writings by Chas. Dury 295
Insects, Social behavior of... 292
Insects, Typha 6, 34
Liberia and the Belgian Congo 93
Metathetely 125
Naming of Variants 80, 213
Parasites, Insect, 6, 35, 82, 137, 158, 195, 202
Plants, Insectivorous 124
Principle of homologies and phylogenetic series 238
Pterygotan Insects, Priority claim in dividing 130
Pupation, Food requirements for 13
Reptiles, Predatory 158
Rex Research Foundation.... 286
Rocky Mountain Conference.. 267
Say, Thomas, Naturalist 90
Specialists, Scarcity of..... 191
Wings of Insects, Guide to study of 238
Wings of Insects, Venation of 238

OBITUARY NOTICES

Comstock, J. H.....152, 153, 156
Crevecoeur, F. F. 212
Dury, C. 293
Emerton, J. H. 95
Hine, J. S. 96, 177
Philiptschenko, J. 95
Ris, F. 96, 181
Viereck, H. L. 268

PERSONALS

Abbott, C. E. 58
Adams, C. F. 25
Arbethnot, K. D. 268
Beamer, R. H. 58, 268
Benjamin, F. H. 230
Britton, W. E. 58
Brues, C. T. 57
Bunn, R. 268
Clark, A. H. 57
Cockerell, T. D. A. 167
Cowan, F. T. 267
Curran, C. H. 57
Davis, E. W. 268
Davis, J. J. 57
Davis, L. G. 268
Dean, G. A. 268
Dietrich, H. 57
Felt, E. P. 57
Fulton, B. B. 57
Gaige, F. M. 63
Griswold, G. H. 57
Hamlin, J. C. 268

Holland, W. J. 58, 157
Howard, L. O. 203
Howe, E. W. 268
Hungerford, H. B. 57
Jones, C. R. 268
Jones, L. 268
Kelly, E. G. 268
Kirtland, J. P. 57
Klots, A. B. 219
List, G. M. 268
Mackie, A. 167
Marshall, G. A. K. 191
McCampbell, S. C. 268
McIndoo, N. E. 58
McMillan, G. B. 33
Metcalf, C. L. 58
Needham, J. G. 57
Newton, R. 268
Osborn, H. 57
Palmer, M. A. 268
Palmer, S. C. 33, 157
Parker, R. L. 268
Patch, E. M. 57
Quayle, H. J. 58
Reeves, G. I. 268
Rehn, J. A. G. 57
Sherman, F. 58
Smith, R. C. 268
Tulloch, G. S. 58
Weed, A. 57
Whitehead, F. E. 268
Wilbur, D. A. 268
Wilson, F. H. 58
Wilson, J. W. 57

REVIEWS

Bradley: A Laboratory guide to the study of the wings of Insects 238
Manual of the genera of Beetles 88
Suggestions for the Instructor 238
The teaching of the principle of Homologies to elementary classes in Biology, and the use of Phylogenetic series in the Laboratory 238
The venation of Insects' wings 238
Byers: A contribution to the knowledge of Florida Odonata 145
Holland: The Butterfly Book 291
Imms: Recent advances in Entomology 209
Social behavior in Insects.. 292
Ochs: Relationships of the Gyrinidae 55
Staig: The Fabrician types of Insects in the Hunterian Collection at Glasgow University (Coleoptera, Part 1) 263
Strong: The African Republic of Liberia and the Belgian Congo 93
Vignon: Introduction à la Biologie Experimentale 176
Weiss and Ziegler: Thomas Say, early American Naturalist 90
Weismann: The composition of the head of Insects..... 28
Wheeler: Demons of the dust 123

GEOGRAPHICAL DISTRIBUTION

Arizona: Odon. 178. Orth. 204.
California: Dip. 3, 5, 283. Hem. 270. Hym. 77. Lep. 201. Odon. 49, 178. Orth. 204.
Colorado: Orth. 2, 65.
Connecticut: Dip. 108. Lep. 201.
District of Columbia: Col. 203. Neur. 203. Orth. 204.
Delaware: Col. 28.

Florida: Dip. 26, 219, 227. Hem. 58. Hym. 9. Lep. 9. Odon. 114, 145, fossil 151. Orth. 204.
Georgia: Lep. 109, 247, 271. Odon. 114.
Idaho: Lep. 9. Hym. 9.
Illinois: Dip. 242.
Kansas: Lep. 111. Orth. 65.
Louisiana: Dip. 27, 178.
Massachusetts: Dip. 108.
Maryland: Dip. 106, 107.
Maine: Arach. 138. Col. 139. Dip. 106.
Michigan: Col. 36. Dip. 35. Hem. 37. Hym. 9, 36. Lep. 9. Orth. 37.
Minnesota: Col. 13. Dip. 4. Orth. 204.
Mississippi: Hym. 16. Myr. 78.
Missouri: Lep. 15, 24. Hym. 199.
Montana: Lep. 9. Hym. 9.
North Carolina: Odon. 114.
Nebraska: Lep. 125.
New Hampshire: Dip. 105.
New Jersey: Col. 139. Dip. 4.
New Mexico: Col. 112. Dip. 5. Orth. 65.
New York: Dip. 106, 108, 241. Lep. 44.
Ohio: Dip. 107, 108. Hym. 10. Lep. 10. Odon. 63.
Oklahoma: Odon. 276. Orth. 65.
Oregon: Dip. 105. Lep. 1, 12.
Pennsylvania: Dip. 4. Hym. 67. Orth. 204.
South Carolina: Col. 140, 269. Dip. 140, 219. Hym. 269. Odon. 114.
South Dakota: Col. 50. Dip. 4. Lep. 257. Neur. 171. Orth. 65.
Tennessee: Col. 28. Lep. 247, 271. Odon. 114.
Texas: Dip. 5, 280. Orth. 65.
Utah: Hem. 40, 68.
Virginia: Neur. 83.
Washington: Col. 140. Dip. 104, 106, 140. Lep. 13.
Wisconsin: Lep. 287.
West Virginia: Col. 202. Neur. 202.
Africa: Dip. 82, 123. Odon. 82.
Alaska: Dip. 179.
Asia: Acar. 191. Col. 55. Dip. 123, 168.
Canada: Col. 139. Lep. 157. Orth. 33.
Central America: Dip. 170, 178. Odon. 178, 186.
Europe: Acar. 138. Dip. 123. Lep. 188.
Hawaii: Col. 139.
Mexico: Dip. 124, 168, 285. Odon. 178.
South America: Arach. 192. Col. 139, 222. Dip. 170, 286.
West Indies: Dip. 72, 124, 169. Hym. 277. Lep. 220.

ACARINA

Leptus (*phalangii*)
Mites, Oil Palm..... 191
Parasitidae 137
phalangii, Leptus 137
phylloxerae, Rhizoglyphus ... 138
Rhizoglyphus (*phylloxerae*)
Trombidiidae 137
Tyroglyphidae 137
umbilica, Uropoda 137
Uropoda (*umbilica*)
Uropodidae 137

ARACHNIDA

alaus, Chelifer 138
Chelifer (*alaus*)
Chernes (*michaelsoni*)
michaelsoni, Chernes 194
*Parachernes** (*ronnaii*)
Pencetia (*viridans*)
*ronnaii**, *Parachernes* 192
viridans, Pencetia 138

COLEOPTERA

Agonoderus (*pallipes*)
Agriotes (*lineatus, mancus, obscurus*)
Alaus (*oculatus*)
americanus, Meloe 54
Anthicidae 202
Anthicus (*cervinus, cinctus, haldemanni, heroicus, pubescens*)
atripennis, Zonitis 54
aterima, Paria canella 36
badipes, Staphylinus 139
Beetle, Mexican Bean..... 58
Beetles, Manual of genera of 88
bicolor, Nemognatha 55
biguttata, Lytta 54
bilineata, Zonitis 54
brevicollis, Nebria 139
Broscus (*cephalotes*)
Buprestidae (list of species).. 270
calceatus, Ophonus 139
Calendra (*pertinax*)
californicus, Limonius 139, 162
callosa, Epicauta 52
Calosoma (*cancellatum*)
canadensis, Dendroides 13
cancellatum, Calosoma 139
Carabidae 139
carbonaria, Eleodes 112
cephalotes, Broscus 139
cervinus, Anthicus 203
Chrysomelidae 36
Cicindela (*purpurea, rufiventris*)
Cicindelidae 138, 141
cinctus, Anthicus 203
cinerea, Epicauta 52
Classification, Status of Leng's 76
confertus, Henous 54
confusum, Tribolium 126
communis, Melanotus 138
corvina, Epicauta 52
Curculionidae 36
dakotana, Pyrota 51
Dendroides (*canadensis*)
depressus, Pasimachus 265
Dynastes (*tityus*)
Elater (*obscurus, ruficaudis*)
Elateridae 137
Eleodes (*carbonaria*)
engelmanni, Pyrota 51
Epicauta (*callosa, cinerea, ferruginea, lemniscata, maculata, pennsylvanica, sericans, trichrus*)
Fabrician types 263
ferruginea, Epicauta 51
Food requirements for pupation 13
Gnathium (*minimum*)
Gyrinidae 55
haldemanni, Anthicus 203
Henous (*confertus*)
heroicus, Anthicus 202
Horistonotus (*uhleri*)
immaculata, Macrobasis 53
immaculata, Nemognatha 55
lemniscata, Epicauta 52
Limonius (*californicus, pilosus, subauratus*)
lineatus, Agriotes 139
lividus, Monocrepidius 139
lucublandus, Poecilus 139
lurida, Nemognatha 54
lutea, Nemognatha 55
Lytta (*biguttata, nuttalli, sphaericollis*)
Macrobasis (*immaculata, murina, segmentata, unicolor*)
maculata, Epicauta 52
madidus, Steropus 139
mancus, Agriotes 138
Melandryidae 13
Melanotus (*communis*)
Meloe (*americanus*)
Meloidae 50
minimum, Gnathium 54
Monocrepidius (*lividus, vespertinus*)

Mononychus (*vulpeculus*)
murina, Macrobasis 53
Nebria (*brevicollis*)
Nemognatha (*bicolor, immaculata, lurida, lutea, nigripennis, palliata*)
nigripennis, Nemognatha 55
Notaris (*puncticollis*)
nuttalli, Lytta 54
obscurus, Agriotes 163
obscurus, Elater 137
oculatus, Alaus 137
Ophonus (*calceatus*)
palliata, Nemognatha 55
pallipes, Agonoderus 266
Paria (*aterima*)
Pasimachus (*depressus*)
pennsylvanica, Epicauta 52
pertinax, Calendra 36
pilosus, Limonius 139
Poecilus (*lucublandus*)
pubescens, Anthicus 203
punctata, Synchroa 13
puncticollis, Notaris 36
purpurea, Cicindela 141
Pyrochroidae 13
Pyrota (*dakotana, engelmanni*)
ruficaudis, Elater 137
rufiventris, Cicindela 138
Scaphinotus (*unicolor*)
Scarabaeidae 28
Scarites (*subterraneus*)
segmentata, Macrobasis 54
sericans, Epicauta 52
sphaericollis, Lytta 54
stansburyi, Tricrania 54
Staphylinidae 139
Staphylinus (*badipes*)
Steropus (*madidus*)
subauratus, Limonius 140
subterraneus, Scarites 139
Synchroa (*punctata*)
Tenebrionidae 112
tityus, Dynastes 28
Tribolium (*confusum*)
trichrus, Epicauta 51
Tricrania (*stansburyi*)
uhleri, Horistonotus 138
unicolor, Macrobasis 53
unicolor, Scaphinotus 265
vespertinus, Monocrepidius.... 138
vulpeculus, Mononychus 36
Zonitis (*atripennis, bilineata*)

DIPTERA

abstersa, Tephritis 3
Acronarista (*cornuta, mirabilis*)
acutangula, Tephritis 4
Aedes (*egypti*)
aenea, Chaetopsis 35
aestuans, Erax 158
Agromyza (*commelinae, inaequalis, ipomaeae, maculosa, parvicornis, pluniseta*)
Agromyzidae 72
aldrichi, Psilocephala 140
americana, Hydrellia* 106
angustifacies, Stenochthera ... 170
Anopheles (*funestus, gambiae*)
Aphiochaeta (*chaetoneura*)
Asilidae 140
baia, Ochthera* 169
bastardi, Promachus 158
brevipennis, Proctacanthus.... 140
bullata, Sarcophaga 227
canescens, Ochthera* 168
chaetoneura, Aphiochaeta 36
Chaetopsis (*aenea*)
Chironomidae 82
clavis, Macrosargus 35
Collection of C. F. Adams... 25
*Comasarcophaga** (*texana*)
commelinae, Agromyza* 72
comstocki, Vermileo 123
cornuta, Acronarista* 26
Corodonta (*dorsalis*)
crassipes, Hydrellia* 107
Culex (*quinquefasciatus*)
Culicidae 25, 94

decens, Hydrellia 107
dorsalis, Corodonta 36
Drosophila sp. 36
egressa, Thereva 140
egypti, Aedes 94
Elachiptera (*nigriceps*)
Ephydridae 57, 104, 168
Erax (*aestuans*)
Exorista (*larvarum*)
fairchildi, Vermitigris 123
fitchii, Promachus 158
Fossil Diptera 211
floridensis, Sarcophaga 227
Fruit Fly, Mediterranean.... 58
funestus, Anopheles 96
gambiae, Anopheles 96
helicus, Sarcophaga 228
Horseflies of Louisiana..... 178
Hydrellia (*americana, crassipes, decens, morrisoni, notiphiloides, platygastra, pulla, serena, subnitens*)
impar, Sarcophaga 227
inaequalis, Agromyza 75
ipomaeae, Agromyza* 74
Lampromyia spp. 123
larvarum, Exorista 9
loreta, Ochthera* 168
Macrosargus (*clavis*)
maculosa, Agromyza 76
Masicera (*senilis*)
mirabilis, Acronarista 26
morrisoni, Hydrellia* 105
munda, Psilocephala 140
Muscina (*stabulans*)
Mycetophilidae 25
nigriceps, Elachiptera 36
nigrita, Sturmia 11
notiphiloides, Hydrellia* 108
nox, Sarcophaga* 217
occidua, Sarcophagula 227
Ochthera (*baia, canescens, loreta, painteri, wrighti*)
opacus, Vermileo 123
painteri, Ochthera* 169
Parasites 39
parvicornis, Agromyza 76
pedunculata, Sarcophaga* 284
pictipennis, Psilocephala 140
Platychirus (*quadratus*)
platygastra, Hydrellia* 105
plinthopyga, Sarcophaga 227
plumiseta, Agromyza 76
Proctacanthus (*brevipennis*)
Promachus (*bastardi, fitchii*)
Psilocephala (*aldrichi, munda, pictipennis*)
pulla, Hydrellia* 108
quadratus, Platychirus 35
quinquefasciatus, Culex 94
regalis, Stenochthera 170
Sarcophaga (*bullata, floridensis, helicus, impar, nox, pedunculata, plinthopyga, scelesta, semimarginalis, singularis, sternodontis, welchi*)
Sarcophagidae 217, 227, 280
Sarcophagidae, larval food.... 227
Sarcophaginae, Biological observations 227
Sarcophagula (*occidua*)
Sarothromyia (*simplex*)
scelesta, Sarcophaga* 285
semimarginalis, Sarcophaga*.. 283
senilis, Masicera 11
serena, Hydrellia* 104
simplex, Sarothromyia femoralis 227
Simuliidae 241
Simulium (*vittatum*)
singularis, Sarcophaga 227
stabulans, Muscina 11
Stenochthera (*angustifacies, regalis, triornata*)
sternodontis, Sarcophaga 227
Sturmia (*nigrita*)
subnitens, Hydrellia* 106
Syrphidae 179
Tabanidae 94
Tachinidae 26

Tephritis (*abstersa, acutangula, wolffi*)
*texana**, *Comasarcophaga*..... 280
Thereva (*egressa*)
Therevidae 140
Tipulidae 94
triornata, Stenochthera 170
Trypetidae 3
vermileo, Vermileo 123
Vermileo (*comstocki, opaqus, vermileo*)
Vermitigris (*fairchildi*)
vittatum, Simulium 241
*wolffi**, *Tephritis* 5
Worm-lions 123
*wrighti**, *Ochthera* 169

HEMIPTERA

Adelphocoris (*superbus*)
Anasa (*tristis*)
antevolens, Anthocoris 68
Anthocoridae 68
Anthocoris (*antevolens*)
Aphididae 140
Aphis (*avenae, gossypii*)
arundinis, Hyalopterus 37
Atomoscelis (*modestus*)
avenae, Aphis 37
ballii, Thripsaphis 37
Belostomidae 69
Campylomma (*verbasci*)
carneola, Dikraneura 72
Carpocoris (*remotus*)
cassini, Tibicen 58
Chermidae 72
Chlorochroa (*congrua, sayi, uhleri*)
Cicadellidae 71
Cicadidae 69
Cimex (*lectularius*)
Cimicidae 43
cinerea, Piesma 43
cockerelli, Paratrioza 72
comes, Erythroneura 72
communis, Helochara 71
congrua, Chlorochroa 41
Coreidae 42
Corisella (*dispersa*)
Corixidae 69, 270
custator, Thyanta 41
Cydnidae 40
davisi, Tibicen 58
decoratus, Geocoris pallens... 43
dianthi, Rhopalosiphum 37
Dikraneura (*carneola*)
dispersa, Corisella 270
elisus, Lygus pratensis..... 68
ericae, Nysius 42
Erythroneura (*comes*)
Euphalerus (*vermiculosus*)
Euschistus (*inflatus, servus, variolarius*)
Eutettix (*tenellus*)
ferus, Nabis 43
fraxinifolii, Prociphilus 68
Fulgoridae 72
Geocoris (*decoratus*)
Gerridae 69
gossypii, Aphis 37
granarium, Macrosiphum 37
Heliria (*rubidella*)
Helochara (*communis*)
hesperus, Lygus pratensis..... 68
Heteroptera, Utah (list of species) 40, 68
Homoptera, Utah (list of species) 69
Hyalopterus (*arundinis*)
inflatus, Euschistus 41
Ischnorhynchus (*resedae*)
lectularius, Cimex 43
Leioscyta (*testacea*)
Leptocoris (*trivittatus*)
limbolarius, Peribalus 40
Lygaeidae 42
Lygus (*elisus, hesperus, pratensis*)
Macrosiphum (*granarium*)
Membracidae 70
Miridae 68

modesta, Publilia 71
modestus, Atomoscelis 68
Nabidae 43
Nabis (ferus)
Neididae 42
Notonectidae 69
nymphacae, Siphocoryne 37
Nysius (ericae)
pacifica, Stictocephala 71
Paratrioza (cockerelli)
Pentatomidae 40
Peribalus (limbolarius)
persicae, Rhopalosiphum..... 37
Phymatidae 43
Piesma (cinerea)
Plagiognathus (politus)
politus, Plagiognathus 68
pomaria, Typhlocyba 72
pratensis, Lygus 68
Prociphilus (fraxinifolii)
Publilia (modesta)
Reduviidae 43
remotus, Carpocoris 41
resedae, Ischnorhynchus 37
Rhopalosiphum (dianthi, persicae)
rubidella, Heliria 71
ruficornis, Trigonotylus..... 68
rugulosa, Thyanta 41
sayi, Chlorochroa 41
Scutelleridae 40
septemdecim, Tibicen 58
servus, Euschistus 41
Siphocoryne (nymphacae)
Stictocephala (pacifica)
superbus, Adelphocoris 68
tenellus, Eutettix 71
testacea, Leioscyta ferruginipennis 71
Thripsaphis (ballii)
Thyanta (custator, rugulosa)
Tibicen (cassini, davisi, septemdecim)
Tingididae 43
Trigonotylus (ruficornis)
tristis, Anasa 42
trivittatus, Leptocoris 42
Typhlocyba (pomaria)
uhleri, Chlorochroa 41
variolarius, Euschistus 41
verbasci, Campylomma 69
vermiculosus, Euphalerus 72
viridis, Xerophloea 71
Xerophloea (viridis)

HYMENOPTERA

albopilosum, Trypoxylon 200
Aleiodes (intermedius)
Ancistrocerus (fulvipes)
ancylivora, Macrocentrus 9
Andrenidae, Oligolectic 226
Ant, Argentine 140
Ants 240
Apanteles (cinctiformis)
Aphaenogaster (carolinensis)
auripes, Chlorion 200
Beekeepers Association, Ohio. 180
Belomicrus (franciscus)
bermudensis, Odynerus 277
beutenmuelleri, Dolichoderus plagiatus pustulatus 22
bicolor, Eurytoma 36
Bicyrtes (quadrifasciata)
Braconidae 94
brevicornis, Lasius 23
caementarium, Sceliphron ...9, 200
Camponotus (discolor, obliquus)
carolina, Stictia 269
carolinensis, Aphaenogaster texana 17
Casinaria (genuina)
Cerceridae 269
Cerceris (fumipennis, mandibularis)
Chlorion (auripes)
Chrysididae 199
Chrysis (liminifera, sp.)
cinctiformis, Apanteles 10
clavatum, Trypoxylon 200

claviger, Lasius 23
columba, Tremex 67
Diaulinus (*pulchripes*)
discolor, Camponotus caryae.. 22
Dolichoderus (*beutenmuelleri*)
Dorylinae 16
Eciton (*mexicanum*)
Elis (*carolina*)
Eurytoma (*bicolor*)
flavus, Leptothorax pergandei. 18
floridensis, Leptothorax pergandei 18
Formicinae 22
Formica (*integra*)
foveolocephala, Stenamma 17
franciscus, Belomicrus* 77
fulvipes, Ancistrocerus 200
fumipennis, Cerceris 269
genuina, Casinaria 9
inquisitoriella, Pimpla 9
integra, Formica truncicola... 22
intermedius, Aleiodes 9
lamia, Pheidole 21
laminifera, Chrysis 199
Larval wasp food 269
Lasius (*brevicornis, claviger*)
Leptothorax (*flavus, floridanus, spinosus, wheeleri*)
Macrocentrus (*ancylivora*)
mandibularis, Cerceris 269
mexicanum, Eciton 16
mobilensis, Solenopsis globularia 20
Monobia (*quadridens*)
Myrmica (*spatulata*)
obliquus, Camponotus 23
Odynerus (*bermudensis, palaeophilus*)
ornata, Strumigenys 19
palaeophilus, Odynerus (fossil) 212
pallipes, Polistes 200
Parasites 38
pergandei, Solenopsis 20
Pheidole (*lamia*)
pilinasis, Strumigenys clypeata 19
Pimpla (*inquisitoriella*)
Polistes (*pallipes*)
pulchripes, Diaulinus 39
quadridens, Monobia 200
quadrifosciata, Bicyrtes 269
Rogas (*stigmator*)
Sceliphron (*caementarium*)
Siricidae 67
Solenopsis (*mobilensis, pergandei*)
spatulata, Myrmica schencki.. 21
Sphecidae 77
Sphegoidea 199
spinosus, Leptothorax pergandei-floridanus 19
stenamma (*foveolocephala*)
Stictia (*carolina*)
stigmator, Rogas 9
striatidens, Tetramorium 21
Strumigenys (*ornata, pilinasis*)
Tetramorium (*striatidens*)
Tremex (*columba*)
Trypoxylon (*albopilosum, clavatum*)
Vespidae 277
Vespoidea 199
wheeleri, Leptothorax 18

LEPIDOPTERA

Acronyctinae 250
Aellopos (*titan*)
Agaristidae 287
Agrotinae 248
albovenosa, Arsilonche 9
alope, Cercyonis 110
Alypia (*langtoni*)
amphidusa, Colias eurytheme.. 201
Anarta (*richardsoni*)
Apatela (*oblinita*)
aquilo, Plebius 157
Archanara (*subcarnea*)
Archips (*obsoletana*)
Arctiidae 275, 287
Arctiinae 275
Argynnis (*cybele, diana*)

Arsilonche (albovenosa)
arctica, Oeneis semidea..... 157
Arzama (obliqua)
astyanax, Basilarchia 110
Bactra (maiorina)
Baileya (ophthalmica)
Barnes Collection 58
Basilarchia (astyanax)
biselliella, Tineola 57
Bleptina (sangamonia)
Brenthis (butleri, improba, polaris, tarquinius)
butleri, Brenthis 157
Butterflies of Northeastern Georgia 109
Butterflies, Unusual occurrences of 201, 287
Cacoecia (rosaceana)
cardui, Cynthia 110
carneicosta, Panapoda rufimargo 272
Catocalinae 271
Catopsilia (eubule, philea)
cecrops, Strymon 110
Cercyonis (alope)
Characoma (nilotica)
Choranthus (lilliae)
claudia, Euptoieta 110
coenia, Junonia 110
Coleophara sp. 10
Colias (amphidusa, eurytheme, nastes, pelidne, philodice)
comyntas, Everes 110
Cuculliinae 249
cybele, Argynnis 110
Cynthia, (cardui, huntera)
Danaidae 109
Danais (plexippus)
daunus, Papilio 111
diana, Argynnis 110
Dicymolomia (julianalis) ..24, 287
Dione (vanillae)
Diurnal Butterflies, night flight 24, 287
Drepanidae 276
Endothaenia (hebesana)
Erastriinae 252
Erebinae 272
Eresia (rossi)
Eublamma (minima)
eubule, Catopsilia 109
Euparthenos (nubilus)
Euptoieta (claudia)
eurytheme, Colias 109
Euteliinae 252
Everes (comyntas)
fenderi, Plebejus maricopa*... 1
gemma, Neonympha 110
Geometridae 276
Glaucopsyche (pseudargiolus)
Hadeninae 249
hebesana, Endothaenia 10
Hesperidae 110, 220
hewesi, Melitaea* 12
huntera, Cynthia 110
Hypeninae 273
hypophleas, Lycaena 110
improba, Brenthis 157
julianalis, Dicymolomia 11
Junonia (coenia)
Lacosomidae 276
langtoni, Alypia 287
Lacosomidae 276
laudabilis, Polia 249
legitima, Polia 249
leo, Spragucia 252
lilliae, Choranthus* 220
lisa, Terias 109, 202
Lycaena (hypophleas)
Lycaenidae 110
Lymnaecia (phragmitella)
Macronoctua (onusta)
magnus, Parnassius smintheus 257
maiorina, Bactra 11
Marked Cutworm Moths (tables) 45, 46
melinus, Strymon 110
Melitaea (hewesi)
Micropterygidae (fossil) 211
minima, Eublamma 252

misera, Oligia 250
mitographa, Oxycilla 273
nanus, Parnassius smintheus.. 257
nastes, Colias 157
Neonympha (*gemma*)
New Butterfly Book..... 291
nicippe, Terias 109
nilotica, Characoma 271
Noctuidae 44, 247
Nolinae 275
Nonagria (*oblonga, subflava*)
norna, Oeneis 157
Notodontidae 275
nubilis, Euparthenos 271
Nymphalidae 12, 201, 287
oblinita, Apatela 9
obliqua, Arzama 11
oblonga, Nonagria 10
obsoletana, Archips 11
Oligia (*misera*)
Oeneis (*arctica, norna, taygete*)
onusta, Macronoctua 8
ophthalmica, Baileya 271
ornatrix, Utetheisa 287
Oxycilla (*mitographa*)
Panapoda (*carneicosta*)
Pantheinae 272
Papilio (*daunus, philenor, polyxenes, troilus, turnus*)
Papilionidae 109, 111
Parahypenodes (*quadralis*)
Parnassius (*magnus, nanus*)
pelidne, Colias 157
philea, Catopsilia..15, 201, 279, 287
philenor, Papilio 109
philodice, Colias 201
phragmitella, Lymnaecia 10
Phyciodes (*tharos*)
Pieridae 15, 109, 201, 279
Pieridae, generic synonymy... 253
Pieris (*protodice, rapae*)
Plebeius (*aquilo*)
Plebejus (*fenderi*)
plexippus, Danais 109
Plusiinae 272
polaris, Brenthis 157
Polia (*laudabilis, legitima*)
Polyphemus larvae, Metathetely 125
polyphemus, Telea 125
polyxenes, Papilio 109
protodice, Pieris 109
pseudargiolus, Glaucopsyche... 110
Pyralidae 276
quadralis, Parahypenodes 273
rapae, Pieris 109
richardsoni, Anarta 157
rosaceana, Cacoecia 11
rossi, Eresia 157
ruisa, Trichoclea 249
sangamonia, Bleptina 274
Sarrothripinae 271
Saturniidae 125
Satyridae 110
Sphingidae 287
Spragueia (*leo*)
Spreading board 256
Strymon (*cecrops, melinus*)
Sub-sub-specific names 213
subcarnea, Archanara 10
subflava, Nonagria 10
tarquinius, Brenthis 157
taygete, Oeneis 157
Telea (*polyphemus*)
Terias (*lisa, nicippe*)
Tineola (*biselliella*)
titan, Aellopos 287
tharos, Phyciodes 110
Trichoclea (*ruisa*)
troilus, Papilio 109
turnus, Papilio 109
Utetheisa (*ornatrix*)
Vanessa (*virginiensis*)
vanillae, Dione 110
Variants, Naming individual.. 80
virginiensis, Vanessa 287

MALLOPHAGA

caponis, Lipeurus 195

dissimilis, Goniodes 195
gallinae, Menopon 195
Goniocotes (*hologaster*)
Goniodes (*dissimilis*)
heterographus, Lipeurus....58, 195
hologaster, Goniocotes 195
lawrensis, Lipeurus 199
Lipeurus (*caponis, heterographus*) *lawrensis, tropicalis*)
Menopon (*gallinae*)
Philopteridae 195
tropicalis, Lipeurus* 195

MYRIOPODA

birdi, Eurymerodesmus* 101
Chilopoda, list of Oklahoma species 97
Diplopoda, list of Oklahoma species 98
Eurymerodesmus (*birdi, mundus*)
Fontaria (*lamellidens*)
lamellidens, Fontaria* 78
mundus, Eurymerodesmus* ... 102
oklahomae, Spirobolus* 98
Orthoporus (*wichitanus*)
Spirobolus (*oklahomae*)
wichitanus, Orthoporus* 99
Xystodesmidae 98

NEUROPTERA

Aphis Lion 83, 171
Chrysopidae 83, 171
cornuta, Corydalis 202
Corydalis (*cornuta*)
Sialididae 202

ODONATA

Aeshna (*umbrosa*)
Aeschninae 115
Agrion (*dimidiatum, maculatum*)
Agrioninae 116
Agrionidae 63, 64, 276
Anax (*junius, walsinghami*)
Archilestes (*grandis*)
armatus, Dromogomphus 119
arteriosa, Trithemis 82
australis, Gomphus 148
balteata, Macrodiplax 146
basidens, Enallagma 276
bella, Nannothemis 49, 151
berenice, Erythrodiplax 148
Bibliographia Odonatologica 246
Ceratopogonine midges on wings 82
civile, Enallagma 64
Coenagrioninae 117
Corduliinae 115
Coryphaeschna (*ingens*)
credula, Ischnura 146
Dragonflies, common names... 46
Dragonflies, Dixie (list of species) 112
dimidiatum, Agrion 146
Dromogomphus (*armatus*)
Dythemis (*rufinervis*)
elongata, Somatochlora 118
Enallagma (*basidens, civile*)
Epiaeschna (*heros*)
Erythrodiplax (*berenice, minuscula, umbrata*)
Erythemis (*simplicicollis*)
ferruginea, Orthemis 146
Florida Odonata 145
georgina, Macromia 118, 146
Gomphinae 114
Gomphus (*australis*)
grandis, Archilestes 63, 64
heros, Epiaeschna 49
ingens, Coryphaeschna 49
Ischnura (*credula, ramburii, verticalis*)
junius, Anax 49, 64
Lestes (*rectangularis*)
Lestinae 116
Libellulinae 115, 184
linearis, Somatochlora 146
longipennis, Pachydiplax ...49, 147
Macrodiplax (*balteata*)

Macromia (*georgina, taeniolata*)
maculatum, Agrion 146
microstigma, Orthetrum 82
minuscula, Erythrodiplax 148
Nannothemis (*bella*)
Orthemis (*ferruginea*)
Orthetrum (*microstigma*)
Pachydiplax (*longipennis*)
ramburii, Ischnura 146
rectangularis, Lestes 146
Ris Collection 190
rufinervis, Dythemis 150
salva, Telebasis 49, 146
simplicicollis, Erythemis 147
Somatochlora (*elongata, linearis*)
Sympetrum (*vicinum*)
Tachopteryx (*thoreyi*)
taeniolata, Macromia 118
Telebasis (*salva*)
thoreyi, Tachopteryx 146, 151
Trithemis (*arteriosa*)
umbrata, Erythrodiplax 146
umbrosa, Aeshna 64
verticalis, Ischnura 64
vicinum, Sympetrum 64
walsinghami, Anax 49

ORTHOPTERA

azteca, Holocompsa 204
Blattidae 204
borealis, Melanoplus 33
Capucinella (*delicatula*)
caraibea, Eurycotis 204
Composition of the head..... 28
Conocephalus spp. 37
delicatula, Capucinella 204
Diapheromera (*femorata, mesillana, veliei*)
dimidiata, Eurycotis 204
Eurycotis (*caraibea, dimidiata*)
fasciatus, Nemobius 57
femorata, Diapheromera 65
Hemiblabera (*tenebricosa*)
Holocompsa (*azteca, nitidula*)
Melanoplus (*borealis*)
mesillana, Diapheromera veliei 65
Nemobius (*fasciatus*)
nitidula, Holocompsa 204
Phasmidae 2
tenebricosa, Hemiblabera 204
veliei, Diapheromera 2, 65

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

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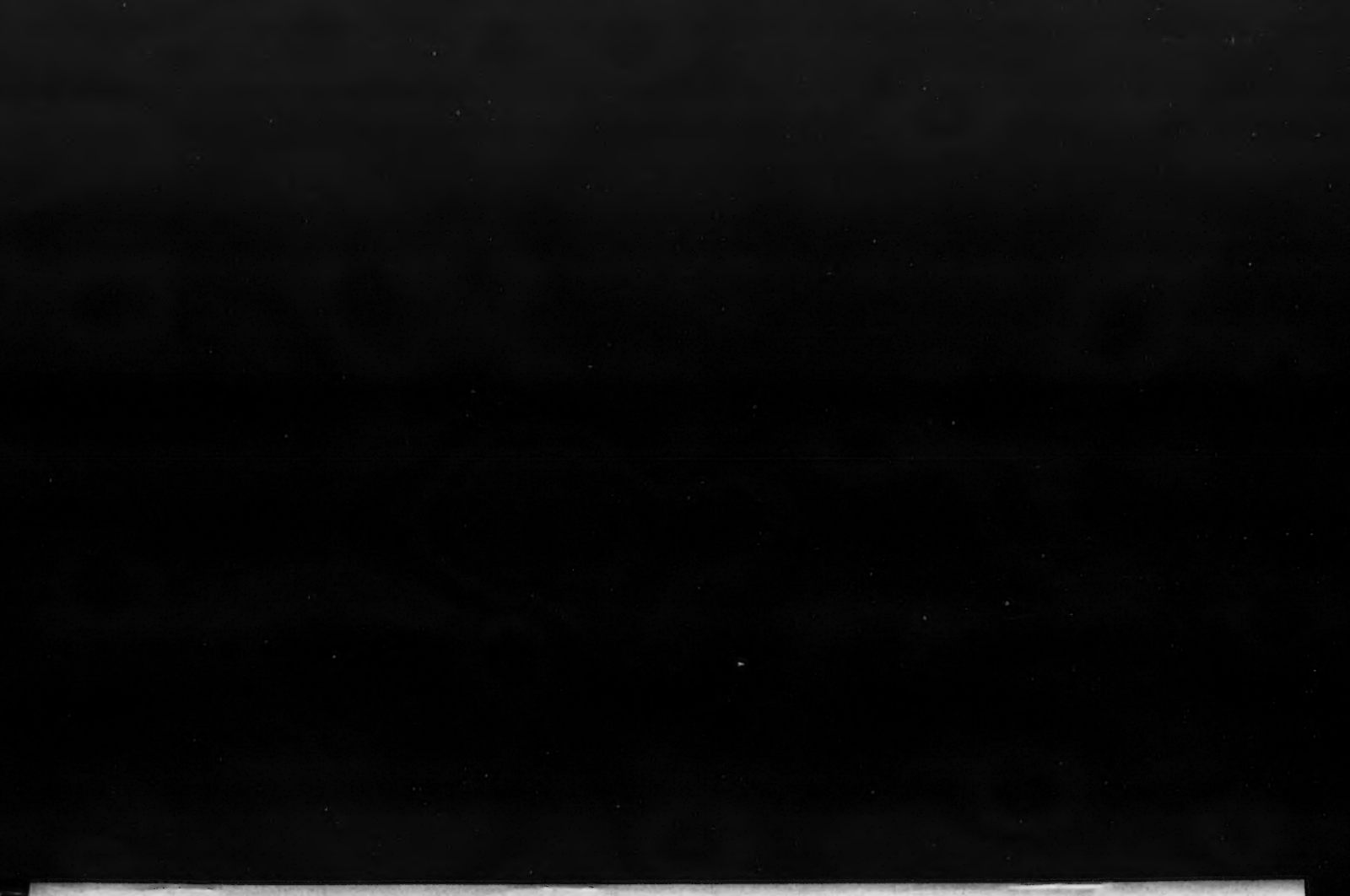
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